This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

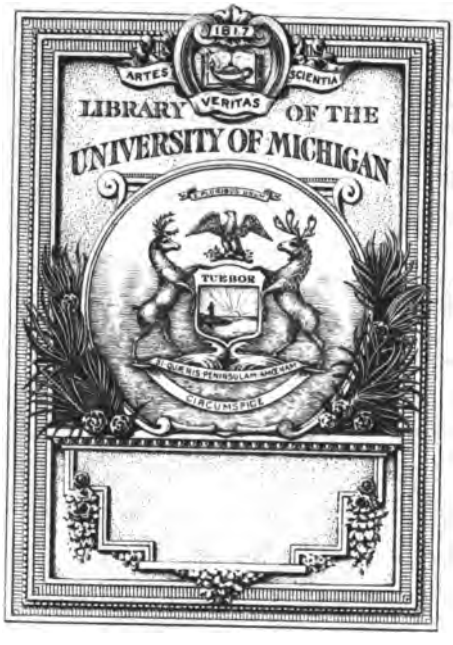
+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

A 436946
LA
418
.06
A3

PROVINCE OF ONTARIO —— EDUCATION DEPARTMENT


1817
ARTES
SCIENTIA
VERITAS
LIBRARY OF THE
UNIVERSITY OF MICHIGAN
TUEBOR
CIRCUMSPICE

LA
418
.06
A3

From the U.S. Cent. Com. Canada 12 777

CENTENNIAL EXHIBITION, PHILADELPHIA,

1876.

DOMINION OF CANADA,

PROVINCE OF ONTARIO.

CATALOGUE OF EXHIBITS

IN

EDUCATION DEPARTMENT.

Toronto:
PRINTED BY HUNTER, ROSE AND COMPANY.
1876.

12779

CENTENNIAL EXHIBITION, PHILADELPHIA,

1876.

DOMINION OF CANADA,

PROVINCE OF ONTARIO.

CATALOGUE OF EXHIBITS

IN

Ontario.

EDUCATION DEPARTMENT.

Toronto:
PRINTED BY HUNTER, ROSE AND COMPANY.
1876.

OFFICIAL STAFF.

THE HONOURABLE ADAM CROOKS, M.P.P., Q.C., LL.D.,
Minister of Education.

J. GEORGE HODGINS, LL.D.,
Deputy Minister.

ALEXANDER MARLING,
Secretary and Accountant.

FRANCIS J. TAYLOR,
Clerk of Statistics.

JOHN T. R. STINSON,
Clerk of Records.

W. H. ATKINSON,
Clerk of Correspondence.

A. C. PAULL,
Clerk of References.

J. H. KERR, J. S. BARBER, FRANK NUDEL, HENRY P. DAVIES, F. T. GRIFFIN—*Assistants.*

Depository Branch.

S. P. MAY, M.D.,
Clerk of Libraries.

H. M. WILKINSON,
Cashier and Assistant Clerk.

S. A. MAY, S. B. SYKES, W. SWEETEN, R. J. BRYCE, R. L. CATHRON, A. J. SANGSTER, A. F. LOBB—*Assistants.*

Committee of Council on Education.

THE HONOURABLE OLIVER MOWAT, M.P.P., Q.C.,
Attorney-General.

" " ADAM CROOKS, M.P.P., Q.C.,
Provincial Treasurer & Minister.

" " TIMOTHY BLAIR PARDEE, M.P.P., Q.C.,
Commissioner of Crown Lands.

" " CHRIS. FINLAY FRASER, M.P.P., Q.C.,
Commissioner of Public Works.

" " SAMUEL CASEY WOOD, M.P.P.,
Provincial Secretary, Commissioner of Agriculture, Immigration, &c.

The Central Committee of Examiners.

Rev. Prof. GEO. PAXTON YOUNG, M.A.,
Chairman.

JAMES A. McLELLAN, LL.D.

J. M. BUCHAN, M.A.

S. ARTHUR MARLING, M.A.
High School Inspectors.

JOHN J. TILLEY,

JOHN C. GLASHAN,
Public School Inspectors.

Reclass 7-22-39 MOE

CATALOGUE OF SCHOOL MATERIAL

EXHIBITED BY THE

Education Department of Ontario,

AT THE

CENTENNIAL EXHIBITION,

PHILADELPHIA, 1876.

PART I.

REPORTS OF EDUCATIONAL INSTITUTIONS—PHOTOGRAPHS AND MODELS OF SCHOOL BUILDINGS—PUPILS' WORK—SCHOOL METHOD, &C.

CLASS I.

(*a*) *Historical and Statistical.*

This section (*a*) relates to the High and Public Schools under the control of the Education Department of Ontario.

1. Education Reports of Upper Canada, from 1821 to 1845.
2. Annual Reports of the Chief Superintendent of Education, from 1845 to 1874.
3. Inspectors' Special Reports of Public Schools in Ontario, 21 vols.
4. The Public School Law of Ontario.
5. General Regulations for the organization, government and discipline of Public Schools in Ontario.
6. The Law relating to the Council of Public Instruction, in regard to the Normal Schools, Collegiate Institutes and High Schools in Ontario.

7. The Law relating to Roman Catholic Separate Schools in Ontario, with Appendix.
8. Remarks on the Non-Separate School agitation.
9. School Law Lectures explanatory of the new School Law, by J. G. Hodgins, LL.D., Deputy Minister of Education.
10. Catalogues of the People's Depository for Ontario, from 1852 to 1875.
11. The Journal of Education for Ontario, from 1848 to 1875.
12. The Canada Educational Directory, by A. Marling, LL.B., Secretary to Minister of Education.
13. Meteorological Reports of the High Schools, from 1868 to 1870.
14. Tablet explanatory of Public School meetings, and how to conduct them.
15. Tablet of School Arbitrations and Awards.
16. Tablet with Blank Public School Debentures for the Province of Ontario.

(*b*) *Reports from the Educational Institutions in Ontario.*

17. Examination Papers of the University of Toronto, from 1872 to 1875.
18. The Calendar of University College, Toronto, from 1870 to 1875.
19. The Calendar of Trinity College, Toronto, from 1858 to 1875.
20. Reports and Calendars of Queen's College, Kingston, from 1841 to 1876.
21. Reports and Papers of the Ontario Institutions for the Deaf, Dumb, and Blind, from 1859 to 1875.
22. Reports of the Inspector of Asylums, Prisons, and Charities in Ontario, from 1871 to 1875.

CLASS II.

Educational Institutions and other Public Buildings in Ontario, including Asylums, Public Charities, &c.

(*a*) *Educational Institutions.*

These Institutions are represented by large photographs of the buildings, mounted in frames averaging 2 feet 6 inches long by 2 feet high.

23. The University of Toronto.

This University was originally established by Royal Charter, and endowed with a grant of Public Lands, in 1828. The annual income from this endowment now exceeds $55,000. It is exclusively Provincial, being supported by Provincial funds and subject to the general control of the Government, but possessing its own governing body, and is not within the jurisdiction of the Education Department.

24. University of Trinity College, Toronto.
    This University is not of a Provincial character. It was established for the instruction of members of the Church of England, and obtained a Royal Charter in 1852. It is supported by an endowment from subscriptions in England and in Canada.
25. Victoria Methodist University, Cobourg.
    This College obtained University powers in 1841, to confer degrees in Arts, Theology, Law and Medicine. It is chiefly supported by an income derived from an endowment of about $100,000, contributed by voluntary subscriptions.
26. Albert (Methodist Episcopal) University, Belleville.
    Albert University was established in 1857, and obtained University powers in 1871.
27. Knox Presbyterian College, Toronto.
    This College was established in 1845. The course is chiefly Theological.
28. De La Salle Roman Catholic Institute, Toronto.

Ladies' Colleges.

29. Brookhurst Ladies' Academy, Cobourg.
30. Ladies Presbyterian College, Brantford.
31. Ladies Wesleyan College, Whitby.
32. Wesleyan Female College, Hamilton.

(*b*) *Public Buildings in Ontario.*

These Institutions are chifley maintained and managed by the Provincial Government.

33. Institution for the Blind, Brantford.
    This Institution was founded for the purpose of instructing blind pupils of sound intellect, in the ordinary branches of an English education. Pupils unable to pay the nominal sum of $50 per annum are boarded and taught gratuitously.
34. Institute for the Deaf and Dumb, Belleville.
    This Institution was established in 1870, for the education of Deaf-Mutes in the Province of Ontario, between the ages of seven and twenty-one years. The course of study comprises the usual English education. The boys learn carpentering, cabinet-making, shoe-making, farming and gardening; and the girls are taught sewing, knitting and general domestic work.
35. Provincial Lunatic Asylum, Toronto.
36. Lunatic Asylum, London.
37. Lunatic Asylum, London.
38. Inebriate Asylum, Hamilton.
39. Public General Hospital, Toronto.

40. House of Industry, Toronto.
41. Temperance Hall, Toronto.
42. Reformatory for Boys, Penetanguishene.
43. Court House, County of Carleton, Ottawa.
44. County Jail, Carleton, Ottawa.
45. Central Prison, Toronto.
46. City and County Jail, Hamilton.

CLASS III.

Public and High School Buildings.

These Schools are exclusively under the control of the Education Department. For particulars as to their government, prescribed course of studies, &c., see the Report on Educational Institutes of Ontario for the Centennial Exhibition of 1876, by the Hon. Adam Crooks, Minister of Education.

(a) Education Department.

47. The Education Department, Toronto, showing the Normal and Model Schools, Grounds, &c.

This Department prescribes Text Books, Library and Prize Books, programme and subjects of study, apportions the Legislative Grant and generally controls all matters relating to the Public and High Schools.

(b) Normal and Model Schools.

These Schools have been established for the supply of trained Teachers. Two Model Schools for boys and girls are attached to the Normal School at Toronto, to aid in the practical training of Normal School students.

48. Normal and Model Schools, Toronto.
49. Provincial Normal School, Ottawa.

(c) Collegiate Institutes.

High Schools which have four Masters at least, and an average of sixty male classical pupils, are called Collegiate Institutes.

50. Collegiate Institute, Hamilton.
51. Collegiate Institute, Brantford.
52. Collegiate Institute, Peterborough.
53. Collegiate Institute, Kingston.

(d) High Schools.

The High (or secondary) Schools are open to pupils of both sexes who can pass an entrance examination, chiefly in the fourth class work of the Public Schools. These Schools are intended to furnish a higher English,

or a classical course with modern languages, so that the pupils may be fitted to pass the matriculation examination in the University or to enter business.

54. High School, Mitchell.
55. High School, Belleville.
56. High School, Morrisburgh.
57. High School, Port Perry.
58. High School, Guelph.
59. High School, Goderich.
60. High School, Thorold.

(e) Union, High and Public Schools.

61. Union School, Napanee.
62. Union School, Morrisburgh.
63. Public and High School, Napanee.

(f) Public Schools.

The Public (or Primary) Schools are open the whole year for the children of all residents within the school division between the age of five and twenty-one to attend school *free of all charge.* The Inspectors are compelled to take a census of the children, and in case any between the ages of seven and twelve years have not been under instruction for four months in the year at least, they must notify the parents, and can impose a rate of one dollar per month for each child in case the neglect continues; or may lay a complaint before a Justice of the Peace, who has power to fine, and, in default, imprison for the offence. (See Exhibition Report of Minister of Education for 1876.

64. Ward School, Toronto.
65. Central Public School, East, Ottawa.
66. Central Public School, West, Ottawa.
67. St. George's Ward, Primary School, Ottawa.
68. Victoria Ward, Primary School, Ottawa.
69. Central Public School, Hamilton.
70. Ward Public School, Hamilton.
71. Ward Public School, Hamilton.
72. Public School, Brantford.
73. Ward School, Brantford.
74. Ward School, Brantford.
75. Central School, Goderich.
76. Public School, Goderich.
77. Public School, Goderich.
78. Public School, Morrisburgh.
79. Public School, Mitchell.

(*g*) *Models of School Buildings.*

These models are made to a proper scale for working, and with the ground plans are used for reference by Trustees requiring information repecting valuation, school accommodation, &c., previous to erecting new buildings.

80. Model of Building for Collegiate Institute.
81. Model of Public School.
82. Model of Interior, showing seats and desks, gallery, waiting-rooms, lavatories, &c.
83. Model of a Building erected in a rural district.

(*h*) *School Plans.*

84. Plan of Public School, Mitchell.
85. Plan of School premises, Mitchell.
86. Plan of High School, Mitchell.
87. Plan of first floor in Academy, Napanee.
88. Plan of first floor in Ward School House, Napanee.
89 Plan of School House, Simcoe.
90. Plan of School Grounds, Simcoe.
91. Plan of High School, Thorold.
92. Plan of School Grounds, Thorold.

CLASS IV.

School Fittings and Furniture.

93. The Ontario School Desk, with two separate folding seats, manufactured by Charles Potter, Toronto. Single desk and seat, $4; Double desk and two seats, $6.
94. Canada Desk, manufactured by W. Stahlschmidt, Preston. Double-desk and two seats, $4 50; single desk and seat, $3 25.
95. The Favourite, manufactured by W. Stahlschmidt, Preston. Double-desk and seat, $3 75; single desk and seat, $3 25.
96. Model of Gynasium, with various kinds of Calisthenic apparatus.
97. Specimen of Black Board Plating, which can be applied on paper, wood or plaster, and can be used with talc pencil instead of chalk.
98. Map Stand, to contain set of ten maps, with moveable support to show maps at any elevation.
99. Specimens of Ink Wells, unevaporating, metal, &c., &c.
100. Blackboard Brushes, Lamb's Wool, Tapestry, &c.
101. Blackboard Dividers, Crayons, &c.

CLASS V.

School Work—Penmanship—Maps and Drawings.

This work is executed chiefly by pupils in the Public and Model Schools from ten to fourteen years of age; in some few cases this age has been exceeded.

(*a*) *Map Drawing.*

102. Map of England and Wales, A. V. McIntosh, Girls' Model School, Toronto.
103. Map of Journeys, St. Paul, L. Y. Samo, Girls' Model School, Toronto.
104. do Ontario, M. Vannevar, do do.
105. do South America, J. F. McKim, do do
106. do Ontario, E. A. Dunn, do do
107. do do L. McLean, do do
108. do do W. H. Lindop, St. Thomas High School.
109. do British Isles, R. C. Nanton, Boys' Model School, Toronto.
110. do World, A. Lyman, do do
111. do World, C. J. Townsend, do do
112. do England and Wales, J. L. Lehrle, do do
113. do North America, H. M. Pellatt, do do
114. do America, W. G. Hampton, do do
115. do South America, A. E. Mackay, do do
116. do South America, G. M. Gibbs, do do
117. do Africa, W. Wilson, Central School, Hamilton.
118. do Asia, J. Turnbull, do do
119. do South America, J. Malcolmson, do
120. do do W. Gordon, do
121. do Canada (First step), H. J. Lesslie, do
122. do do (Second step), do do
123. do do (Third step), do do
124. do Italy, J. Allan, Central School, do
125. do Centre Piece, D. Acland, do
126. do East Indies, J. Turnbull, do
127. do Palestine, H. Walker, do
128. do Co. Wentworth, do
129. do Oceanica, T. Hutchinson, do
130. do City of Hamilton, H. J. Leslie, do
131. do British Isles, J. Allan, do
132. do Oceanica, T. Hutchinson, do

(*b*) *Drawing (Pencil).*

Drawing from objects is one of the prescribed subjects of study for each class in the Public Schools. See List of Drawing Materials, pp. —.

133. Flowers, L. Drew, Public School, Exeter.
134. Animals, J. Moir, do S. S. Usborne.
135. Flowers, A. Moir, do do

136. Animals, G. Harrison, Public School, Exeter.
137. Flowers, J. Bissett, do Usborne.
138. Animals, E. Hutchinson, Public School, Exeter.
139. do T. Oke, do do
140. do M. Harrison, do do
141. do M. A. Bissett, do do
142. Landscape, G. Stewart, do S. S. 2, Colborne.
143. Animals, J. Elston, do S. S. 5, Usborne.
144. Miscellaneous, W. Welsh, do Township Usborne.
145. Ship, H. P. Eckhardt, Boys' Model School, Toronto.
146. Human Figures, C. J. Townsend, Boys' Model School, Toronto.
147. Miscellaneous, J. G. Morris, do do
148. do J. Harstone, do do
149. Landscape, A. E. Blogg, do do
150. Miscellaneous, G. Gregg, do do
151. do H. Pellatt, do do
152. Landscape, F. W. Brown, do do
153. Miscellaneous, H. Howitt, do do
154. do R. Denison, do do
155. Landscape, C. R. Rogers, do do
156. Miscellaneous, J. Laidlaw, do do
157. do H. C. Nanton, do do
158. do A. Martin, do do
159. do B. Hoch, do do
160. do W. Dickey, Girls' Model School, Toronto.
161. do A. Alley, do do
162. do N. Mathews, do do
163. do L. Toose, do do
164. do H. Walker, do do
165. Landscape, E. Colgan, do do
166. Miscellaneous, H. Hamilton, do do
167. do A. Fisher, do do
168. Landscape, K. Ferguson, do do
169. Miscellaneous, M. Howard, do do
170. Landscape, M. Vannevar, do do
171. do M. Wilson, do do
172. Miscellaneous, G. Cooper, do do
173. do J. Hamilton, do do
174. do F. B. Peterkin, do do
175. do C. Stewart, do do
176. Human Figure, L. Dobbyn, School, Strathroy.
177. Landscape, W. T. Crispin, do do
178. do R. Diem, do do
179. Moonlight Scene, E. Woodhull, do do
180. Landscape, A. Slater, do do

NOTE.—Those marked *miscellaneous* are drawn from objects.

181. Crayon Drawing, L. Barnes, School, Strathroy.
182. Human Figure, J. Collins, do do
183. Landscape, M. Kilty, do do
184. Miscellaneous, L. Carmichael, do do
185. do M. Messacar, Normal School, Toronto.
186. do E. McDiarmid, do do
187. do E. Jarvis, do do
188. do H. Giles, do do
189. do C. Winter, do do
190. do W. Brown, do do
191. do W. Barr, do do
192. do M. Head, do do
193. do M. Alexander, do do
194. do M. F. Spence, do do
195. do E. Oxenham, do do
196. do C. Gfroerer, do do
197. do R. G. Marshall, do do
198. do G. Wilkinson, do do
199. do F. Manis, do do
200. do M. McGrath do do
201. do A. S. Gray, do do
202. do K. Marquis, do do
203. do J. Bate, do do

(*c*) *Penmanship.*

204. Specimen of writing, J. Fraser, Girls Model School, Toronto.
205. do A. McCormac do do
206. do M. Mossman, do do
207. do E. Cooper, do do
208. do F. B. Peterkin, do do
209. do M. H. Wilson, do do
210. do M. Inglis, do do
211. do M. Vannevar, do do
212. do L. Bailey, do do
213. do A. Alley, do do
214. do M. Young, do do
215. do A. A. Duck, do do
216. do J. Langley, Boys Model School, Toronto.
217. do H. P. Eckhardt, do do
218. do J. Delaney, do do
219. do W. S. Jones, do do
220. do J. Suckling, do do
221. do G. Aird, do do
222. do C. Norris, do do

NOTE.—From 184 to 203 inclusive are drawn from objects by Teachers in training.

223. Specimen of Writiug, G. J. Ussher, Boys Model School, Toronto.
224. do W. A. Richardson, do do
225. do W. J. Williams, do do
226. do J. Harstone, do do
227. do J. R. Walker, do do
228. do A. Fowler, S. S. 3, W. Wawanosh.
229. do M. J. Durnin, do do
230. do J. Murray, do do
231. do J. Radcliff, do do
232. do J. Durnin, do do
233. do J. A. Patterson, do do
234. do J. McDonald, do do
235. do W. J. Mathers, S. S. 4, W. Wawanosh.
236. do S. Gaunt, do do
237. do E. J. Campbell, do do
238. do W. Cumming, do do
*239. do J. Gaunt, do do
240. do Wm. Peterkin, Public School, Tp. Usborne.
241. do J. Hodgson, do do
242. do E. Frayne, do do
243. do M. Carling, Public School, Exeter.
244. do E. Hicks, do do
245. do L. Southcott, do do
246. do E. Harwood, do do
247. do S. Harris, do do
248. do G. A. Case, do do
249. do R. Hawkins, Public School, S. S. 2, Hay.
250. do N. Mack, do do
251. do A. Case, do do
252. do J. Mack, do do
253. do H. Strong, Public School, S. S. 2, Usborne.
254. do M. Moir, do do
255. do E. Bartt, Public School, S. S. 2, Colborne.
256. do A. McNeil, High School, Mitchell.
257. do H. W. Rath, do do
258. do R. Kerr, do do
259. do L. J. Johnston, do do
260. do M. Ritchey, Public School, Haliburton.
261. do D. J. Ritchey, do do
262. do P. Findlay, do do
263. do J. Ritchey, do do
264. do H. H. Peel, Public School, Minden.
265. do H. M. Burt, do do
266. do J. Down, do do
267. do W. Down, do do
268. do E. Burt, do do

*239. This boy is only seven years old.

269. Specimen of writing, E. Darnin, Public School, 3, W. Wawanosh.
270. do J. T. McManis, De La Salle R. C. Institute, Toronto.
271. do J. Hillyard, De La Salle R. C. Institute, Toronto.
272. do A. Kinsman, do do
273. do F. M. Ronayne, do do
274. do P. Geriken, do do
275. do J. O'Learey, do do
276. do J. Holland, do do
277. do J. Comerford, do do
278. do C. Ryan, do do
279. do J. J. Burns, do do
280. do J. McGann, do do
281. do T. McManus, do do
282. do T. Cooney, do do
283. do P. Dwan, do do
284. do M. Hayes, do do
285. do J. Maloney, do do
286. do C. Mingenback, do do
287. do J. P. Halpin, do do
288. do F. Lee. do do
289. do J. Way, do do
290. do J. O'Connor, do do
291. do F. Watters, do do
292. do J. McManus, do do
293. do J. A. Lamb, do do

Specimens of Drawing from the School of Practical Science, Toronto.

This School was established in 1873. Lectures are given on Chemistry, Geology and Physics, and classes are instructed in Linear and Freehand Drawing.

294. Section and Elevation Steam Cylinder, J. W. Harcourt.
295. Elevation Double Blowing Engine, W. C. Ogilvy.
296. Express Locomotive, C. F. Howell.
297. Isometrical View of Windlass, J. H. Ewart.
298. Architectural Drawiug, J. A. Wells.
299. Front Elevation and Ground Plans, P. S. Carré.
300. Section of Engine, H. M. Williams.
301. do W. C. Ogilvy.
302. Steam Crane, H. N. Williams.
303. Architectural Drawing, S. H. Townsend.
304. do do
305. do do
306. do do
307. Plan Bridge, J. A. Carbert.
308. Sculcoates' Bridge, do

209. Mill Gearing—Example of Shading—W. C. Ogilvy.
310. Antique (copy), J. S. Goselin.
311. do J. Somers.
312. do J. Clare.
313. do W. Miller.
314. do Dr. Hillary.
315. do do

CLASS VI.

School Method and Organization.

316. Entrance Examination Papers for High Schools and Collegiate Institutes, from 1873 to 1875.
317. Entrance Examination Papers for Normal School.
318. Entrance Examination Papers for first, second and third class Certificates in the Normal School, Toronto, from 1858 to 1874.
319. Examination Papers for first and second class Provincial Certificates, and third class County Certificates, from 1871 to 1875.
320. General Register of School attendance.
321. Daily Register do
322. High School Register do
323. General Limit Table of Studies in the Public Schools.
324. Order and classification of studies for the Public Schools.
325. Time Table, with hours of attendance and occupation of school time.
326. Blank Weekly Report of standing of pupils in Public Schools. Attendance, conduct, diligence and recitations in Class I, II and III.
327. Public School Pupils' Lesson Report (blank) on subjects of study, &c. (for a Term), Class IV, V, and VI.
328. Public School Report (blank) of one month's *Credit* and *Demerit* marks obtained.
329. Public School Pupils' Monthly Summary (for four months) of attendance, conduct and recitations in subjects of study.
330. Honor Roll for High Schools, with blank spaces for names.
331. Honor Roll for Public Schools do do
332. Certificates, cards and rewards of merit for good conduct, diligence, &c.
333. Single Merit Cards for do do
334. Ten Merit Cards do do
335. Fifty Merit Cards do do
336. Hundred Merit Cards do do

PART II.

TEXT-BOOKS FOR PUBLIC AND HIGH SCHOOLS—BOOKS RELATING TO THE PROFESSION OF TEACHING, AND LIBRARY AND PRIZE BOOKS.

CLASS I.

Text-Books.

The price charged for Text-Books is at the rate of 18 cents for books published in Europe at 1s. sterling, or 70 cents for books published in the United States at $1.00, averaging 35 per cent. lower than the usual retail price of these books.

(*a*) *List of Text Books authorized for use in the Public Schools, January*, 1876.

I. English.

1. The Canadian National Series of Reading Books. (Authorized edition.)
2. The Spelling Book, A Companion to the Readers. (Authorized edition.)
3. Miller's Analytical and Practical English Grammar. (Authorized edition.)
4. An English Grammar for Junior Classes. By the Rev. H. W. Davies, D.D. (Authorized edition.)
5. English Grammar, Primer. By Rev. R. Morris.

II. Arithmetic and Mathematics.

6. Advanced Arithmetic for Canadian Schools. By Barnard Smith, M.A., and Archibald McMurchy, M.A. (Authorized edition.)
7. Elementary Arithmetic for Canadian Schools. By the Rev. Barnard Smith, M.A., and Archibald McMurchy, M.A. (Authorized edition.)
8. Elements of Algebra, Todhunter's or Sangster's.
9. Euclid's Elements of Geometry, Pott's or Todhunter's.

III. Geography and History.

10. Lovell's General Geography. By J. George Hodgins, LL.D., Barrister-at-Law. (Authorized edition.)
11. Easy Lessons in General Geography, By ditto. (Authorized edition.)

12. A School History of the British Empire. By William Francis Collier, LL.D.
13. A History of Canada and of the other British Provinces of North America. By J. George Hodgins, LL.D., Barrister-at-Law.
14. Outlines of General History. By William Francis Collier, LL.D.
15. The Great Events of History. By William Francis Collier, LL.D.
16. Freeman's European History.

IV. Physical Science.

17. Rudimentary Mechanics. By Charles Tomlinson. Portions relative to the mechanical powers.
18. How Plants Grow: A Simple Introduction to Botany, with Popular Flora. By Asa Gray, M.D.
19. Lessons in Elementary Physics, by Balfour Stewart, LL.D.
20. Physics, by Balfour Stewart, LL.D. (Science Primers.)
21. Elementary Mechanics, including Statics and Dynamics, by J. B. Cherriman, M.A.
22. Elementary Statics, by J. Hamblin Smith, M.A.
23. Elementary Hydrostatics, by J. Hamblin Smith, M.A.
24. Outlines of Natural History, by H. Alleyne Nicholson, M.D.
25. Physiology (Science Primers) by M. Foster, M.A., M.D.
26. Lessons in Elementary Physiology, by Professor Huxley.
27. Physical Geography, by A. Geikie, LL.D. (Science Primers.)
28. Geology, by Archd. Geikie, LL.D. do
29. Introductory Text Book of Physical Geography, by David Page, F.R.S.E. (For High Schools.)
30. Chemistry, by H. E. Roscoe. (Science Primers.)

V. Miscellaneous.

31. First Lessons in Agriculture. By Rev. Dr. Ryerson.
32. Our Bodies. By Ellis A. Davidson.
33. Easy Lessons on Reasoning. By Archbishop Whately.
34. The Dominion Accountant. By W. R. Orr. (Authorized edition.)
35. First Lessons in Christian Morals. By Rev. Egerton Ryerson, D.D., LL.D.
36. Elements of Moral Science. By Rev. Francis Wayland, D.D., abridged by the author.
37. A Comprehensive System of Book-keeping, by Single and Double Entry. By Thomas R. Johnson.
38. Field Exercises and Evolutions of Infantry. Published by authority. Pocket edition (for Squad and Company Drill).
39. The Modern Gymnast. By Charles Spencer.
40. A Manual of Vocal Music. By John Hullah.
41. Three Part Songs. By H. F. Sefton. (Authorized edition.)
42. National Mensuration.
43. Vere Foster's two series of Drawing Books.

44. Right Lines in their Right Places. By Ellis A. Davidson. (22 cents.)
45. Teachers' Guide, and Bartholomew's Primary School Drawing Cards. By Miss J. H. Stickney.
46. The Drawing Book for the Dominion of Canada, in Progressive Studies, seven numbers.
47. William Hermes' Drawing Instructor. For advanced students.
48. Writing Copy Books, used in the Normal and Model Schools for Ontario. In six parts.

(*b*) *List of Authorized Text Books for Collegiate Institutes and High Schools, January*, 1876.

Sanctioned and Authorized by the Council of Public Instruction for Ontario.

NOTE.—The Council has decided that the books on English Subjects authorized for High Schools may also be used in the Public Schools.

I. Latin.

49. Arnold's First and Second Latin Books, the English editions; or revised and corrected by J. A. Spencer, D.D., or
50. Dr. Smith's Series I. II. III. IV.
51. A Small Grammar of the Latin Language. By William Smith, LL.D.
52. Bryce's Series of Reading Books.

If preferred, the following may be used instead of the above series:—

53. Harkness's 1. An Introductory Latin Book.
54. 2. A Latin Reader.
55. 3. A Latin Grammar.
56. The Young Scholar's Latin-English and English-Latin Dictionary. By Joseph Esmond Riddle, M.A.

II. Greek.

57. Dr. W. Smith's Initia Græca.
58. A Smaller Grammar of the Greek Language, abridged from the Larger Grammar of Dr. George Curtius.
59. Farrar's Greek Syntax.
60. Harkness's First Greek Book.
61. Liddell and Scott's Greek-English Lexicon.

III. Ancient History, Classical Geography, and Antiquities.

62. A Manual of Ancient History. By Dr. Leonhard Schmitz.
63. First Steps in Classical Geography. By Prof. James Pillans.

64. A Classical Dictionary of Biography, Mythology and Geography. By William Smith, LL.D.
65. A Dictionary of Greek and Roman Antiquities. By William Smith, LL.D.

IV. French and German.

66. FRENCH.—Pujol, or De Fivas' Grammar and Reader.
67. A Complete Dictionary of the French and English Languages. By Gabriel Surrenne. Spier's New Abridged Edition.
68. GERMAN.—Ahn's Grammar, Adler's Reader. (See programme for authors.)

V. English.

69. The Canadian National Series of Reading Books. (Authorized edition.) See No. 1.
70. The Spelling Book, a Companion to the Readers. (Authorized edition.) See No. 2.
71. Miller's Analytical and Practical English Grammar. (Authorized edition.) See No. 3.
72. History of English Literature. By W. Spalding, A.M.
73. Craik's English Language and Literature.
74. English Grammar, Primer. By Rev. Rev. R. Morris. See No. 5.

VI. Arithmetic and Mathematics.

75. Advanced Arithmetic for Canadian Schools. By the Rev. Barnard Smith, M.A., and Archibald McMurchy, M.A. See No. 6.
76. Elementary Arithmetic for Canadian Schools. By the Rev. Barnard Smith, M.A., and Archibald McMurchy, M.A. See No. 7.
77. Elements of Algebra, Todhunter's or Sangster's.
78. Euclid's Elements of Geometry, Potts' or Todhunter's.

VII. Modern Geography and History.

79. Lovell's General Geography. (Authorized edition.) By J. George Hodgins, LL.D., Barrister-at-law. See No. 10.
80. A School History of the British Empire. By William Francis Collier, LL.D. See No. 12.
81. A History of Canada and of the other British Provinces of North America. By J. George Hodgins, LL.D., Barrister-at-Law. See No. 13.
82. Outlines of General History. By William Francis Collier, LL.D. See No. 14.
83. The Great Events of History. By William Francis Collier, LL.D. See No. 15.
84. Freeman's European History. See No. 16.

VIII. Physical Science.

85. Rudimentary Mechanics, by Charles Tomlinson, with Cassell's Hand-Book of Natural and Experimental Philosophy, *or*,- See No. 17.
86. Manual of Mechanics, by the Rev, Samuel Houghton, M.A., F.R.S.
87. How Plants Grow: A Simple Introduction to Botany, with Popular Flora. By Asa Gray, M.D. See No. 18.
88. Lessons in Elementary Chemistry. By Henry E. Roscoe, B. A., L.R.S.
89. Lessons in Elementary Physics, by Balfour Stewart, LL.D. See No. 19.
90. Physics, by Balfour Stewart, LL.D. (Science Primers.) See No. 20.
91. Elementary Mechanics, including Statics and Dynamics, by J. B. Cherriman, M.A. See No. 21.
92. Elementary Statics, by J. Hamblin Smith, M.A. See No. 22.
93. Elementary Hydrostatics, by J. Hamblin Smith, M.A. See No. 23.
94. Outlines of Natural History, by H. Alleyne Nicholson, M.D. See No 24.
95. Physiology (Science Primers) by M. Fester, M.A., M.D. See No. 25.
96. Lessons in Elementary Physiology, by Prof. Huxley. See No. 26.
97. Physical Geography, by A. Geikie, LL.D. (Science Primers.) See No. 27.
98. Geology, by Archibald Geikie, LL.D. See No. 28.
99. Introductory Text-Book of Physical Geography, by David Page, F.R. S.E. (for High Schools.) See No 29.
100. Chemistry, by H. E. Roscoe. (Science Primers.) See No. 30.

IX. Miscellaneous.

101. First Lessons in Agriculture. By Rev. Dr. Ryerson. See No. 31.
102. First Book on Anatomy, Physiology, and Hygiene, for Private Schools and Families. By Calvin Cutter, M.D., *or*, (for Public Schools.)
103. Our Bodies. By Ellis A. Davidson. See No. 32.
104. Easy Lessons on Reasoning. By Archbishop Whately. See No. 33.
105. The Dominion Accountant. By W. R. Orr. (Authorized edition.) See No. 34.
106. First Lessons in Christian Morals. By Rev. Egerton Ryerson, D.D. LL.D., *or*, See No. 35.
107. Dr. Wayland's Abridged Elements of Moral Science. See No. 36.
108. A Comprehensive System of Book-keeping, by Single and Double Entry. By Thomas R. Johnson. See No. 37.
109. Field Exercise and Evolutions of Infantry, Published by Authority. Pocket edition (for Squad and Company Drill). See No. 38.
110. The Modern Gymnast. By Charles Spencer. See No. 39.
111. A Manual of Vocal Music. By John Hullah. See No. 40.

112. Three-Part Songs. By H. F. Sefton. (Authorized edition.) See No. 41.
113. National Mensuration. See No. 42.
114. Vere Foster's two series of Drawing Books. See No. 43.
115. Right Lines in their Right Places. By Ellis A. Davidson.
116. Linear Drawing. By Ellis A. Davidson.
117. Teacher's Guide, and Bartholomew's Primary School Drawing Cards By Miss J. H. Stickney.
118. The Drawing Book for the Dominion of Canada, in progressive studies, seven numbers. See No. 46.
119. William Hermes' Drawing Instructor. For advanced Students. See No. 47.
120. Writing Copy Books, used in the Normal and Model Schools for Ontario. In Five Parts. See No. 48.

(c) *Additional Books used for examination of Teachers on Natural Philosophy and English Literature.*

121. Theoretical Mechanics. By Twisden.
122. Principles of Mechanics. By Goodeve.
123. Theory of Heat. By Maxwell.
124. Milton (Seeley's series).
125. The Spectator. By Morley.
126. Longer English Poems. By Hales.
127. Lives of the Poets. By Johnson.
128. Lady of the Lake.
129. Macbeth (Layman's series).

CLASS II.

Books relating to the Profession of Teaching supplied from the People's Depository connected with the Education Department of Ontario.

Teachers' Professional Library Books.

These are supplied at the same rate as Text Books, but can only be sold to persons actually engaged in the profession of teaching.

Science of Education.

130.	Philobiblius' History and Progress of Education	$1 12
131.	Schmidt's History of Education Ancient and Modern	0 50
132.	Spencer's Education, Intellectual, Moral and Physical	0 90
133.	Norris' Education of the People, occasional Essays	0 98
134.	Boutwell's Educational Topics and Institutions	0 85
135.	Dwight's Higher Christian Education	1 15
136.	Hecker's Scientific Basis of Education	1 85

137.	Mayhew's Universal Education, its Means and Ends	$1 30
138.	Youman's Culture demanded by Modern Life	1 50
*139.	Rigg's English National Education and Elementary Schools	2 16
140.	Davies' Higher Education of Women	0 63
141.	Mann's Lectures and Reports on Education	2 25
*142.	Mann's Annual Reports on Education, 1839 to 1848	2 25
*143.	Donaldson's Lectures on Education	0 63
144.	Bracket's Education of American Girls	1 22
145.	Principles of Education drawn from Theory and Revelation, 2 vols.	2 40
146.	Gall's Nature's Normal School	0 45

Practical Education.

147.	Everett's Practical Education and Useful Knowledge	$1 03
148.	Randall's Popular Education and Public Institutes	1 05
149.	Crider's Pedagogics (Poems)	0 50
150.	Sand's Philosophy of Teaching, Teacher, Pupil, &c	0 70
151.	Jewell's School Government	1 10
152.	Harding's Practical Handbook of School Management and Teaching	0 36
153.	Hart's in the School Room	0 90
154.	Menet's Practical Hints on Teaching, with plans of Schools, cloth	0 55
155.	Do do in paper	0 35
*156.	Cassell's Popular Educator, 6 vols	5 40
157.	Cassell's Technical Educator, 4 vols	4 32
158.	Holbrook's School Management	1 25
159.	Gill's School Management	0 54
160.	Handbook Teaching of Elementary Schools	0 35
*161.	Handbook for Teachers of Infant Schools	0 35

Theory and Practice of Education.

162.	Fowler's Teachers' Institute for Young Teachers	$0 89
163.	Jolly's Harmony of Education, Teacher's Assistant	0 36
164.	Thoughts on Vocation and Profession of the Teacher.	0 27
165.	Duncan's Examiner, or Teacher's Aid	0 50
166.	Bates' Teacher's Institutes, and the Theory of Education	0 55
167.	Bates' Lectures on Mental and Moral Culture	1 12
168.	Robinson's Manual of Method and Organization	0 85
169.	How to teach Manual of Methods	0 90

Home and Early Education.

170.	Northend's Teacher and the Parent, with Frontispiece	$1 12
171.	Phelp's Educator, or Hours with my Pupils	1 10

172. Phelp's Student, or Fireside Friend $1 10
173. Beecher's Religious Training of Children 1 20
174. Currie's Early and Infant School Education 0 86
175. Chamber's Infant Education, Two to Six years of age 0 36
176. Young's Infant School Teacher's Manual 0 55
177. Abbott's Gentle Measures in Training the Young 1 25
178. Eggleston's How to Educate yourself with or without Masters. 0 55
179. Abbott's Child at Home, the principles of filial duty 0 70
180. Pullen's Maternal Counsels to a Daughter 0 63

Kindergarten and Object Teaching.

181. Ronge's Guide to the English Kindergarten, with Songs set to Music $1 55
182. Calkin's Object Lessons for Teachers and Parents 1 03
183. Wilson's Manual of Instruction in Object Lessons 1 03
184. Welch's Object Lessons for Teachers of Primary Schools 0 68
185. Lilienthal's Things Taught, systematic Object Lessons 0 30
186. Barnard's Object Teaching for Primary Schools 2 10
187. Gray's Topics for Teachers, 2 vols 1 00
188. Griffith's Handbook for the Preparation of Lessons 0 18
189. Park's Manual of Object Lessons 0 45
190. Ross' How to Train Young Eyes and Ears. 0 27
191. Walker's Handbook of Object Lessons 0 44
192. Pestalozzian Lessons on Objects 0 63
193. Gill's Notes on Lessons 0 40
194. Lake's Book of Object Lessons 0 35
195. Flower Object Lessons, or Frst Lessons in Botany 0 60
196. Wood's Object Lessons in Botany 1 05

The Sciences.

197. Barnard's Oral Training Lessons in Natural Science $0 72
198. Cooley's Easy Experiments in Physical Science 0 56
199. Chaplin's Political Economy for instruction in Schools and Colleges 0 89
200. Burton's Observing Faculties in the Family and School 0 52
201. Hervey's Christian Rhetoric 2 50
202. Spencer's Essays, Moral, Political and Esthetic 1 45
203. Rodwell's Dictionary of Science 5 50

Teachers' Aids in Teaching.

204. Potter and Emerson's School and School Masters $1 00
205. Northend's Teacher's Assistant, School Disclipine, &c. 1 10
206. Page's Theory and Practice of Teaching 1 05
207. Wickerman's Methods of Instruction 1 20

208. Sullivan's Popular Education..... $1 25
209. Forrester's Teacher's Text Book..... 1 90
210. Holbrook's Normal Schools; Method of Teaching..... 1 25
211. Sypher's Art of Teaching School, Suggestions, &c..... 1 10
212. Well's Graded Schools, Instruction for Public Schools..... 0 95
213. Wickersham's School Economy..... 1 10

(6) *Physical Education.*

214. Root's School Amusements, with Engravings..... $ 1 08
215. Beecher's Physiology and Calisthenic Exercises..... 0 70
216. Beecher's Letters on Health and Happiness 0 70
217. Watson's Manual of Calisthenics, with illustrations..... 0 75
218. De Laspe's Calisthenics..... 0 85
219. Wood's Physical Exercises, with illustrations..... 1 03
220. Spencer's Modern Gymnast, 120 illustrations 0 18
221. Blackwell's, Laws of Life, Physical Education of Girls..... 0 70
222. Parson's Calisthenic Songs, Illustrated..... 0 33
223. Ruth's Physical Development of Children 0 10
224. Schoolmaster's Drill Assistant..... 0 27
225. Hunt's Manual of Elementary Drill..... 0 10
226. Hunt's Lessons in Drill for Girls..... 0 10

(7) *Educational Biography and Sketches.*

227. Miller's Schools and Schoolmasters .....42c and $0 90
228. Ascham's Schoolmaster Education, in the 15th Century..... 1 20
229. Lyon's Power of Christian Benevolence..... 0 78
230. Teacher's Last Lesson, Memoir of Martha Whiting..... 0 90
231. Hope's Book about Dominies, by a Member of the Profession 0 63
232. Dickens' School and Schoolmasters 0 90
233. Tilleard's Life and System of Pestalozzi..... 0 54
234. Fraser's Memoir of David Stowe..... 0 80
235. Barnard's American Contributions to Pedagogy..... 2 29

(8) *Miscellaneous.*

236. Olin's College Life, its Theory and Practice..... $1 00
237. Porter's American Colleges, and the American Public..... 1 05
238. Thompson's English School Room and Private Tuition.... 1 00
239. Staunton's Great Schools of England, Eton, &c..... 1 60
240. Edinburgh Sessional School and other Institutions..... 1 00
241. Barnard's National Education of Europe 1 60
242. Wilkin's Natural Education in Greece 0 90
243. Northrop's Education Abroad..... 1 05
244. Mansfield's American Education, its principles, &c 0 90

245. Randall's History of the Common School System of the State of New York..... $3 75
246. Barnard's Military Schools and Instruction in the Science and Art of War... ..... 4 15
247. Barnard's Letters, Essays and Thoughts on Studies and Conduct, American Journal of Education..... 2 55
248. Barnard's Aphorisms on Education..... ... . 1 75
249. Cox's Recollections of Oxford... ..... 1 40
250. Barnard's American Teachers and Educators 3 25
251. Mills' Industrial and Technical Education, What to Teach... 0 60

(9) *School House Architecture, etc.*

252. Johonnot's School Houses, Estimates, Plans, &c..... $2 65
253. Barnard's School Architecture, with Plans, &c 1 65
254. Hodgins' School House and its Architecture 1 00
255. Leeds' Treatise on Ventilation with Various Plates 1 78
256. Eassie's Healthy Houses, history, defects and remedies of Drainage, Ventilation, Warming, &c..... 0 75
257. Butler's Ventilation of Buildings..... .... 0 40

(10) *Self Education and Personal Helps for Young Men.*

258. McCrie's Autopædia; Instructions on Personal Education... $1 65
259. Self Improvement, for the Young..... .... 0 17
260. Garvey's Manual of Human Culture 1 55
261. Gentle Life, Essays on Formation of Character, 2 v..... 2 16
262. About in the World, various Essays 1 08
263. Stowe's Little Foxes about Domestic Happiness 0 63
264. Hervey's Principles of Courtesy..... ..... 1 03
265. Bazaar, a Book of Decorum..... .. ... 0 75
266. Manners of Modern Society..... .... 0 45
267. Foster's Improvement of Time 1 20
268. Todd's Complete Works, Truth made Simple, &c..... 0 90
269. Beecher's Lectures to Young Men..... .... 0 63
270. Landel's Beacons, &c., Lessons for Young Men 0 63
271. Landel's Young Men in the Battle of Life..... .... 0 63
272. Binney's Is it Possible to make the best of both Worlds?... 0 54
273. Christian Training for Parents and Teachers 0 63
274. Geikie's Life, a Book for Young Men 0 63
275. Guert's Young Men Setting out in Life..... 0 27
276. Stevenson's Praying and Working, Man in earnest..... ... 0 42
277. Cobbet's Advice to Young Men..... .. 0 63
278. James's Young Man's Friend, a Guide through life..... 0 85
279. Smith's Government of the Heart, for Young Men..... 0 63
280. Prince Albert's Golden Precepts, Principles, &c.. ..... 0 54
281. Guide to Wisdom and Virtue, by eminent Physicians, &c.... 0 52

282.	Foster's Essays, Decision of Character	$0 90
283.	Sherwood's Self Culture in Reading, Speaking and Conversation	1 10
284.	Stone's Complete Examiner, or Candidates' Assistant	1 00
285.	Mavor's Young Man's Companion	3 50
286.	Rev. Dr. Ryerson's Christian Morals	0 20
287.	Nott's Counsels to Young Men	0 52
288.	Mixing in Society, Complete Manual of Manners	0 63
289.	Blackie's Self Culture, Intellectual and Moral	0 45

(11) *Aids to Female Teaching and Education.*

290.	Tytler's Sweet Counsels, a Book for Girls	$0 90
291.	Sigourney's Letters to Young Ladies	1 05
292.	James's Young Woman's Friend and Guide	0 89
293.	Ellis' Education of the Heart, Woman's best Work	0 63
294.	Orton's Liberal Education of Women	1 05
295.	Beecher's Domestic Economy, for Young Ladies	1 03
296.	Phelp's Discipline of Life, or Ida Norman	1 00
297.	Governess Life, its Trials, Duties, & Encouragements	0 36
298.	Amica's Callings and Responsibilities of a Governess	0 63
299.	Beecher's House-keeper and Health-keeper	1 08
300.	Heman's Young Woman's Companion	3 50

(12) *School Life Illustrated.*

301	Hope's Book about Boys	$0 63
302.	Hope's Stories of French Schools	0 90
303.	Hope's Stories of School Life	0 90
304.	School Life at Winchester College	1 35
305.	Farrar's Eric, or Little by Little, Tale of Roslyn School	0 90
306.	Farrar's St. Winifred. The World at School	1 35
307.	Kingston's Ernest Bracebridge, or School Days	0 63
308.	May's Louis' School Days, a Story for Boys	0 80
309.	Adam's Barford Bridge, Schoolboy Trials	0 90
310.	Adams' Tales, Charlton School, with *illustrations*	0 63
311.	Hope's Master John Bull, Holiday Book for Parents and Schoolmasters	0 63
312.	Hope's Stories about Boys	0 63
313.	Fitzgerald's Pictures of School Life and Boyhood	0 63
314.	Public Schools, Winchester, Westminster, Rugby, &c	1 53
315.	Recollections of Mrs. Anderson's School	0 63

(13) *English Language and Philology.*

316.	Fowler's English Language, its Elements, 8vo, $1.25 and	$1 75
317.	Wilson's Elements of Punctuation	0 56

318.	Alford's Plea for the Queen's English	$0 90
319.	Roget's Thesaurus of English Words and Phrases	1 40
320.	Smith's Synonymes and Antonyms	0 90
321.	Farrar's Essay on the Origin of Languages	0 90
322.	Craik's English Literature and Language	1 50
323.	Friswell Varia, Readings from Rare Books	1 08
324.	Mackay's Beauties of the English Language	1 17
325.	Origin and Progress of Language	0 16
326.	Marsh's Origin and History of the English Language	3 25
327.	Trench on the Study of Words	0 87
328.	Barton's English Composition	0 73
329.	Bates' Analysis of English Composition	0 45
330.	Reid's Rudiments of English Composition	0 40
331.	Oliphant's Sources of Standard English	1 25
332.	Gould's Good English	0 87
333.	Abbott's How to Parse	0 63
334.	Townsend's Manual of Dates	3 50
335.	Haydn's Dictionary of Dates relating to all Ages	3 75
336.	Haydn's Dictionary of Dates, all Ages and Nations	3 50
337.	Rorse's Index of Dates, 2 vols	3 85
338.	Blair's Chronological Tables	1 80
339.	Overall's Dictionary of Chronology	2 40
340.	Mackay's Facts and Dates, Events in History	0 80
341.	Chamber's Historical and Miscellaneous Questions with Answers	0 90
342.	Whately's Easy Lessons on Reasoning	0 35
343.	Williams' Readable Dictionary, Classified	1 30
344.	Bohn's Handbook of Proverbs	0 90
345.	Smith's Art Education, Scholastic and Industrial	3 50
346.	Beeton's Dictionary of Science and Literature, 2 vols	3 80
347.	Dictionary of Useful Knowledge, 2 vols	1 80

(15) *Speaking and Elocution.*

348.	Hervey's Rhetoric of Conversation	$1 00
349.	Hodgin's School Speaker and Reciter	0 48
350.	Maury's Principles of Eloquence	0 50
351.	Ewing's Principles of Elocution	0 63
352.	Loomis' Mental and Vocal Culture for Schools	0 90
353.	Bacon's Manual of Gesture	1 15
354.	Viles' Imperial Speaker, Readings, &c	1 28
355.	All about Hard Words, Every Day Difficulties	0 45
356.	Dictionary of Derivations of the English Language	0 70
357.	Routledge's Modern Speaker and Reciter	0 63
358.	How to read in Public and Private	0 18
359.	Morell's Poetical Reading Book	0 45
360.	Useful Teacher, English Grammar, History and Geography	0 18

361.	Neil's Art of Public Speaking	$0 18
362.	Handbook to the Desk, Office and Platform	0 90
363.	Moore's What to Read and How to Read	0 54
364.	Routledge's Every day Blunders in Speaking	0 09
365.	Monmonier's High School Literature	1 25
366.	Isbister's Illustrated School Speaker and Reciter	0 63
367.	Graham's Principles of Elocution	0 45
368.	Cathcart's Youth's Speaker, in Prose and Poetry, for Declamation and Recitation	0 65
369.	Ross' System of Elocution	0 63
370.	McDowall's Rhetorical Reading for Schools	0 56
371.	Armstrong's Poetical Readings and Recitations	0 18
372.	Putman's Best Reading, Hints on the Selection of Books,	1 30
473.	Rowton's Debater, a new theory of the Art of Speaking	1 20

CLASS III.

Library and Prize Books.

In connection with the Education Department there is a Depository for the supply of Library and Prize Books. As it is impossible, in the limited space allotted to this Department at the Centennial Exhibition, to exhibit specimens of all the books, samples only of the different Departments are exhibited; but as a guide to the system of selection and method of distribution, we give the following extract from the preface of the Library Catalogue of 1874.

This General Library Catalogue, as now revised, contains works in every department of human knowledge.

The General Principles upon which books have been selected for the Public Libraries are given in the following Extract from the Minutes of the Council of Public Instruction, dated 2nd of August 1873.

The Council of Public Instruction deems it proper to state its principles of proceeding in performing the important and responsible task of selecting books for these Public School Libraries.

1. The Council regards it as imperative, that no works of a licentious, vicious or immoral tendency, and no works hostile to the Christian Religion, should be admitted into the libraries.

2. Nor is it, in the opinion of the Council, compatible with the objects of the Public School Libraries, to introduce into them controversial works on Theology, or works of denominational controversy, although it would not be desirable to include all historical and other works in which such topics are referred to and discussed; and it is desirable to include a selection of suitable works on the evidences of Natural and Revealed Religion.

3. In regard to books on ecclesiastical history, the Council agrees in a selection from the most approved works on each side.

4. With these exceptions, and within these limitations, it is the opinion of the Council that as wide a selection as possible should be made of useful and entertaining books of permanent value, adapted to popular reading in the various departments of human knowledge—leaving each Municipality to consult its own taste, and exercise its own discretion in selecting books from the general catalogue.

5. The including of any books in the General Catalogue, is not to be understood as the expression of any opinion by the Council in regard to any sentiments inculcated or combated in such books; but merely as an acquiescence on the part of the Council in the purchase of such books by any Municipality, should it think proper to do so.

6. The general catalogue of books for Public School Libraries may be modified and enlarged from year to year, as circumstances may suggest, and as suitable new works of value may appear.

The system of Public Libraries which has been brought into operation during the year 1853, has formed an era in the intellectual history of Ontario. It is a system which has been a subject of inquiry, consideration and preparation for years—which has been a matter of free and public consultation in every country, which leaves the people free to act as counties, townships, cities, towns, villages, or school sections, as they please—which combines all the resources of each municipality to provide useful and entertaining reading for the whole population—and renders accessible in the remotest municipality of the country, and at the lowest prices, the best books for popular reading that are published either in Great Britain or in the United States. Through the medium of these books the sons and daughters of our land may contemplate the lives of the good, the wise, and the great of both sexes and of all ages; survey the histories of all nations; trace the rise and progress of all science and useful arts; converse with the sages and bards of Ancient Greece and Rome, as well as with the philosophers, poets, scholars, discoverers, inventors, artists, travellers, and benefactors of mankind of all times and countries—exhaustless sources of instruction and entertainment.

Library and Prize Apportionment.

Public School Libraries.

The Minister of Education is prepared to apportion *one hundred per cent.* upon all sums which shall be raised from local sources by Municipal Councils and School Corporations, for the establishment or increase of Public Libraries in Ontario, under the regulations provided according to law. Remittances must not be in less sums than five dollars. Forms and catalogues furnished upon application.

Prizes in Schools.

The Minister of Education will grant *one hundred per cent.* upon all sums not less than five dollars transmitted to him by Municipalities or

Boards of School Trustees for the purchase of books or reward cards for distribution as prizes in High and Public Schools. Forms and catalogues furnished upon application.

The price charged for these books is at the rate of eighteen cents on the shilling sterling, of retail cost, being nearly thirty-five per cent. lower than the current retail prices of these books, therefore the actual cost to the schools, after deducting the Legislative apportionment, is nine cents for books published at one shilling sterling.

The Catalogue of 1874 is subdivided into departments as follows:

(In addition to this catalogue, some thousands of different publications have since been approved of and are kept for sale at the Depository.)

Department of History—482 *different works.*

1. Jewish History, Holy Land, &c.
2. Egypt, Assyria, &c.
3. Ancient History.
4. Greece.
5. Rome.
6. Roman Catholic Authors.
7. Mediæval History.
8. Modern History.
9. England.
10. Great Battles, &c.
11. Ireland.
12. Scotland.
13. France.
14. Spain.
15. Italy, Germany, Sweden, &c.
16. Russia and Turkey.
17. India and China.
18. Africa and Pacific Ocean.
19. Australia and Polynesia.
20. America.
21. British North America.

Department of Voyages—303 *different works.*

22. Palestine, Egypt, &c.
23. Nineveh, Assyria and Persia.
24. China, India, Japan, &c.
25. Africa.
26. Pacific Ocean, &c.
27. Australia and New Zealand.
28. Missionary Travels.
29. Voyages Round the World.
30. Sea and Sailor.
31. Arctic Regions, Whale Fisheries.
32. America.
33. Europe.
34. England and Ireland.
35. France and Spain.
36. Italy, Sicily, &c.
37. Switzerland.
38. Russia, &c.
39. Norway, Sweden, &c.
40. Tales of Travel &c., for Young People.

Department of Biography—364 *different works.*

41. Scripture and Classical.
42. Religious Biography.
43. Kings and Queens of England.
44. Kings, Queens, Emperors of France, &c.
45. Lives of Warriors, &c.
46. Lives of Statesmen, &c.
47. Lives of Poets.
48. Professional and Scientific men.
49. Sculptors and Painters.
50. Boyhood of Great men.
51. Great and Good men.
52. Female Biography.
53. Scotch Biography.
54. French Biography.
55. Spanish, Italian, German, &c.

56. American Biography.
57. Biographical Dictionaries.

Department of Literature—636 *different works.*

58. History of English Literature.
59. History of European Literature.
60. History of American Literature.
61. English Prose Works.
62. Irish Prose Works.
63. Scottish Prose Works.
64. European Prose Works.
65. American Prose Works.
66. Speeches and Orations.
67. Rhetoric, Logic, &c.
68. Political Economy, &c.
69. English Jurisprudence.
70. American Jurisprudence.
71. Philosophy and Morality.
72. Evidences of Christianity, Natural Theology, &c.
73. Biblical Literature, &c.
74. Moral and Religious Anecdotes.
75. English Poetry.
76. Irish and Scotch Poetry.
77. American Poetry.
78. Canadian Poetry.
79. Miscellaneous Poetry.
80. English Encyclopædias, Dictionaries, &c.
81. French Dictionaries.
82. Classical Dictionaries.
83. Greek Classics.
84. Latin Classics.
85. Latin Literal Translations.
86. Greek Literal Translations.

Department of Zoology, Ethnology, &c.—118 *different works.*

87. Ethnology, &c.
88. Zoology.
89. Scripture Zoology.
90. Tales about Animals.
91. Instinct of Animals.
92. History of Birds.
93. History of Fishes.
94. Conchology, &c.
95. The Aquarium, &c.
96. History of Insects.
97. Popular Natural History.

Department of Physiology, &c.—41 *different books.*

98. Physiology, &c.

Department of Botany—49 *different books.*

99. Botany.

Department of Agriculture—89 *different works.*

100. The Farm, &c.
101. The Garden and Orchard.
102. Bees.
103. Poultry.
104. The Horse.
105. Cattle, &c.

Department of Chemistry—23 *different books.*

106. Chemistry.

Department of Geology—35 *different books.*

107. Geology.

Department of Natural Phenomena, the Microscope, &c.—45 *different works.*

108. Natural Phenomena.
109. The Microscope.

Department of Physical Science—73 *different books.*

110. Meteorology.
111. Astronomy.
112. Ancient, Modern and Physical Geography.
113. Atlasses and Gazetteers.
114. Miscellaneous.

Department of Natural Philosophy, Arts, Manufactures, &c. — 160 *different books.*

115. General Natural Philosophy.
116. Optics.
117. Electricity, &c.
118. Steam, &c.
119. Mechanics, &c.
120. History of Inventions.
121. Manufactures, &c.
122. Architecture, Roads, &c.
123. Naval Architecture, &c.
124. Arts, Sciences, &c.
125. Scientific Dictionaries.
126. Science for the Household.
127. Science for the Young.

Teachers' Professional Library—64 *different books.*

128. History of Education.
129. Practical Education, &c.
130. Home and Early Education.
131. School Amusements.
132. School Architecture.
133. English Language, Chronology, &c.

Department of Practical Life, Religious and Moral Tales, Essays, &c.—496 *different works.*

134. Scripture Tales and Sunday Readings.
135. Pastoral Sketches, Prayer, &c.
136. City Missions, &c.
137. Temperance Tales, &c.
138. Sketches from Life.
139. Law of Kindness.
140. Religious Tales.
141. Essays, &c.
142. Popular Readings.
143. Home and Domestic Tales.
144. Scotch Tales.
145. Miscellaneous Moral Tales.
146. Short Tales and Stories.
147. Fairy Tales, &c.
148. Books for Young Men.
149. College Life.
150. School Boy Life.
151. Holiday Tales.
152. Books for Boys.
153. Books for Young Women.
154. Books for Girls.
155. Girls' School Life.
156. Miscellaneous Tales for the Young.
157. Stories for Children.

Department of Fiction—141 *different books.*

158. Fiction.

PART III.

READING LESSONS, OBJECT LESSONS, MAPS, CHARTS, GLOBES, PHILOSOPHICAL INSTRUMENTS, &C.

The Legislative apportionment of 100 per cent. is allowed on all the articles in this section of the Catalogue, the same as allowed on Library and Prize books (extract from official catalogues).

School Maps and Apparatus.

The Minister of Education will add *one hundred per cent.* to any sum or sums, not less than five dollars, transmitted to the Department from High and Public Schools; and forward Maps, Apparatus, Charts and Diagrams to the value of the amount thus augmented, upon receiving a list of the articles required by the Trustees. In all cases it will be necessary for any person, acting on behalf of the Trustees, to enclose or present a written authority to do so, verified by the corporate seal of the Trustees. A selection of articles to be sent can always be made by the Department, when so desired. Forms and catalogues furnished upon application.

NOTE.—*Object Lesson Teaching.*

In this section of the catalogue are a large number of articles used specially for Object Lesson Teaching, they will be found classified in the various departments of the catalogue to which they belong.

Kindergarten Object Lesson instruction was first introduced into Germany by Froebel, of Hamburg, who devoted his life to improving methods of elementary instruction, his great principle was to combine amusement with instruction, using for that purpose pictures and models of the actual objects. His method has been improved upon, and Object Lesson Teaching by valuable illustrations including Natural History specimens, models, diagrams &c., to educate the mind through the eye and the ear at the same time is now adopted in all the best schools in Ontario.

One of the large glass cases in the Educational Court of Ontario contains illustrations and explanations of this method.

CLASS I.

Reading Lessons, Mottoes and Writing.

(*a*) *Reading Lessons.*

1. Tablet Reading Lessons, being the First Book of Lessons, Part 1., in sheet form, in thirty-three sheets, price $0 75

2. Scripture Prophetic Sites; set of twelve beautifully coloured pictures, with descriptive reading in large type, price in sheets $0 70
3. Scripture Manners and Customs; set of thirty finely executed coloured illustrations, with descriptive letter press, large type, price, in sheets 1 50

(*b*) *Illuminated Texts and Mottoes for hanging on the School walls.*

A few specimens only are exhibited, but a large collection is kept at the Depository, price from 10 cents to $1 each.

4. "The Lord is my Shepherd," Old English, illuminated.
5. "The Lord is my Light and Salvation," do
6. "Suffer Little Children to come unto Me," do
7. "Give and it shall be given unto you," do
8. "The Ten Commandments," . do
9. "The Creed," do
10. "Pray without ceasing," do
11. "He shall give his Angels charge over thee," do
12. "Shew me Thy way, O Lord," do
13. "As thy days so shall thy strength be," do
14. "The Lord is my Shepherd, I shall not want," do
15. "Looking unto Jesus, the Author and Finisher of our faith," illustrated.
16. "To Thee all Angels cry Aloud," illuminated.
17. The Lord's Prayer, do
18. "My Peace I give unto you," do
19. "Prepare to meet thy God," do
20. "God is my Refuge and Strength do

(*c*) *Spelling Games, Writing, &c.*

(*Specially adapted for School Prizes.*)

21. Parlour Spelling Game, price..... $1 10
22. Practical Spelling Assistant 0 80
23. Transferable Letters 1 25
24. Writing Case with Materials 0 90
25. Papeterie with Writing Materials 2 00
26. Blotter 1 25

For Copy Books see List of Text Books.

CLASS II.

Arithmetic and Geometry.

27. Numeral Frame, price..... $1 20
28. do. do. large size for lecture room..... 6 00

29. Numeral Case with raised figures.. ..... $1 25
30. Brown's Geometrical Chart, illustrating Euclid's Element Books I to VI, price 1 50
31. Chambers' Geometrical Chart, showing Lines, Planes, Solids, Conic Sections, &c., price 1 30
32. Reynold's Geometrical Diagrams, Lines and Angles, Planes, Solids, application of Geometry, price..... 2 75
33. Set Conic Sections, price 1 40
34. Set five Regular Solids, price..... 0 75
35. Weimer's Geometrical Amusement, price..... 0 75

CLASS III.

Drawing.

(*a*) *Drawing Books.*

36. Cassell's Drawing Copy Books, series A. Floral and Vegetable Forms, B. Model Drawing, C. Landscape Drawing, D. Figure Drawing, E. Animal Drawing, 60 numbers, each..... $0 12
37. Canadian Drawing Books, Progressive Studies, 7 parts, each 0 14
38. First Steps in Drawing, Educational Depository, numbers 1, 2, and 3, each..... 0 12
39. National School Board Drawing Books, each..... 0 03
40. Perryian Drawing Lessons, set of 12..... 0 36
41. Hermes' Drawing Lessons, each..... 0 20
42. Pencilled Drawing Copy Books, each..... 0 10
43. Slate Drawing Copies..... 0 22
44. Broad Line Drawing Books..... 0 58
45. Bartholomew's Primary Drawing Cards, 3 numbers, price per packet 0 20
46. Teacher's Guides for do, each 0 30
47. Leaves from Syers' Sketch Book, each..... 0 72
48. The Little Painter's Drawing Book..... 0 30
49. Exercises, Colouring, Birds 0 12
50. Julien's Human Figure..... 0 36
51. Reade's Helps to Freehand and Model Drawing, set of 6..... 0 30
52. An Easy Course of Perspective Drawing 0 36
53. Linear Drawing, showing the application of Practical Geometry to trades, &c..... 0 36
54. Right Lines in Right Places..... 0 18
55. Improved Manuscript Sketch Books, various prices and sizes.

(*b*) *Drawing Materials, Models, &c.*

56. Set of Drawing Models (Department Science and Art) $25 00
57. Set of 16 Drawing Models ....
58. Set of Terra Cotta Drawing Models of Fruit and Leaves, price 2 00

59. Model of a Gate, coloured from nature .....
60. Model of a Well, do ....
61. Plaster Models of Hands (Male and Female) .....50c. to 60c.
62. Plaster Models of Human Feet (male and female) .....60c to 70c
63. Plaster Models of Fruit, Leaves and Plants, beautifully executed and copied from nature. Price from ..... $ 1 00
64. Models of Fruit, being *fac-similes* of various kinds of fruit.
65. Plaster Statuette of Polymenia.
66. Statuette "Extracting the Thorn."
67. Reclining Figure.
68. Allegorical Bust, representing Europe.
69. do do Asia.
70. do do Africa.
71. do do America.
72. Bust, representing Child-life (Pleasure).
73. do do (Sorrow).
74. Bust of an Infant.
75. do do
76. Artists' Colour Box, with crayons, &c 2 50
77. Colour Box, with material 1 50
78. Improved Water Colours, with Exercises 1 25
79. Superior School Colour Box 0 60
80. Cosmographic—Drawing Material 1 00
81. Pictures for Perfecting 1 00
82. Kindergarten Color Box 1 25
83. Box of Crayons, with Holder, &c 1 40
84. Transparent Slate, with Copies 0 65
85. do larger size 1 25
86. Box of Mathematical Instruments 13 00
87. do do 6 00
88. Examples for Crayon Drawing from the Human Figure..... 0 50
89. do do Antique 0 50
90. do do do 0 50
91. do do do 0 50

CLASS IV.

Music.

92. Music Charts for teaching Singing in High and Public Schools, Wilhem's Method, adapted by John Hullah. Parts 1 to 8.
93. do do Parts 9 to 16.
94. do do Parts 17 to 24.
95. do do Parts 25 to 32.
96. do do Parts 33 to 40.
97. do do Parts 41 to 52.

CLASS V.

History and Chronology.

(a) Chronological Charts.

98. Chrono-Genealogical Chart of Bible History from Adam to A.D. 1848.
99. Morrison's Skeleton Chart of Ancient History.
100. Taylor's Genealogical Chart of the Sovereigns of England, showing their respective Titles to the Crown.

(b) Historical Charts, &c.

101. The Roll of Battle Abbey, A.D. 1066, with the Shields of the principal Knights in Armour at the Battle of Hastings.
102. Magna-Charta—Regis Johannis, A.D. 1215, with the Shields of the King's Securities to Magna Charta and Shields of the Barons in Arms.
103. Photograph of the Original Magna Charta, having fac-similes of the handwriting of the Signers.
104. Warrant to Execute Mary Queen of Scots, A.D. 1587.
105. Warrant to Execute King Charles I., A.D. 1648.

(c) Men in Armour.

106. Suit of Knight's Armour with Sword, temp., Henry VIII. Original in the Tower of London.
107. Suit of Black Armour, temp., Edward VI. Original in the Tower of London.
108. Photograph of the Memorial in Hyde Park erected to the Memory of the late Prince Albert.
109. Photograph of the Allegorical Group in Marble representing Europe.
110. do do do Asia.
111. do do do Africa.
112. do do do America.
113. Photograph of the Relievo at the Base of Memorial Monument.
114. do do
115. do do
116. do do
117. The Union Jack and Royal Standard of Great Britain explained.

In connection with the Historical Department, a collection of the Seals of Great Britain from the Educational Museum is exhibited.

This is a very unique collection; it includes all the seals from the time of William the Conqueror to Her Majesty Queen Victoria.

List of Seals.

Early Norman Kings.

2 Seals—	William I.	1066	3 Seals—	Henry I	1100
2 „	William II.	1087	4 „	Stephen	1135

Plantagenets Proper.

5 Seals—	Henry II.	1154	4 Seals—	Edward I.	1272
5 „	Richard I.	1189	4 „	Edward II	1307
2 „	John	1199	4 „	Edward III.	1327
2 „	Henry III.	1216	3 „	Richard II.	1377

House of Lancaster.

3 Seals—	Henry IV.	1399	3 Seals—	Henry VI.	1422
2 „	Henry V.	1413			

House of York.

2 Seals—	Edward IV.	1461	1 Seal—	Richard III.	1483–1485
3 „	Edward V.	1483			

Tudor Period.

1 Seal—	Henry VII.	1485	3 Seals—	Mary	1553
4 Seals—	Henry VIII.	1509	2 „	Elizabeth	1558
4 „	Edward VI.	1547			

Stuart Period.

2 Seals—	James I.	1603	2 Seals—	James II.	1685
2 „	Charles I.	1625	2 „	William III. & Mary	1689
2 „	Oliver Cromwell	1649	2 „	Anne	1702
2 „	Charles II.	1660			

Guelph Period.

2 Seals—	George I	1714	2 Seals—	George IV.	1820
2 „	George II.	1727	2 „	William IV.	1830
2 „	George III	1760	2 „	Victoria	1837

CLASS VI.

Geography and Astronomy.

1 *Topographical Illustration.*

(*a*) *Terrestrial Globe.*

118.	30 inch Terrestrial Globe, high walnut stand		$75 00
119.	18 inch do	high bronze pedestal stand	50 00
120.	12 inch do	high bronze pedestal stand	20 00
121.	12 inch do	low bronze frame	14 00
122.	6 inch do	brass semi-frame	2 00
123.	6 inch do	walnut stand	1 50
124.	3 inch do	(hemisphere)	0 75
125.	Betts' Portable Globe		4 50
126.	18 inch Blackboard Globe for drawing maps		25 00

(*b*) *Globes for School Prizes.*

127.	Dissected Globe, with plain surface, showing Natural History and physical features of Countries		$6 00
128.	4 inch Terrestrial Globe, high stand		2 00
129.	4 inch do	same frame	1 00
130.	3 inch do		0 60
131.	2 inch do		0 37

(*c*) *Raised and Physical Globes.*

These Globes show the physical features, mountain ranges, &c.

132.	12 inch Physical Globe price		$20 00
133.	12 inch Raised Geographical price		20 00
134.	18 inch do	do	30 00

(*d*) *Maps.*

These maps are constructed under the direction of the Education Department expressly for the High and Public Schools of Ontario.

135.	Map of the Eastern Hemisphere	$2 25
136.	Map of the Western Hemisphere	2 25
137.	Map of Europe on a large scale	3 00
138.	Map of Europe, smaller size	2 50
139.	Map of Asia, on a large scale	3 00
140.	Map of Asia, smaller size	2 50
141.	Map of Africa, on a large scale	3 00
142.	Map of Africa, smaller size	2 50

143. Map of America, on a large scale $3 00
144. Map of America, smaller size 2 50
145. Map of the British Isles 3 50
146. Map of British North America, including Ontario, Quebec, Nova Scotia, New Brunswick, Vancouver, Manitoba, &c., size, 3 feet 6 inches, by 7 feet 8 inches 7 00
147. Map of United States 4 00
148. Map of Palestine, including (1) Bible Lands and part of the Ancient World. (2) Travels of the Patriarchs from the East to Canaan. (3) Route of the Israelites from Egypt to Canaan. (4) Canaan divided among the 12 tribes. (5) Palestine, or the Holy Land. (6) Ancient Jerusalem. (7) Travels of the Apostle Paul, 5 feet 6 inches by 4 feet 4 inches 4 00
or, divided into four separate maps, each 1 25

(*e*) *Raised Maps.*

These maps show the elevation of mountains, depressions for rivers, &c., and are far preferable to the ordinary plain maps for instructing pupils in the physical formation of the different countries of the Globe.

149. Large Map of Europe.
150. Map of the British Isles $6 00
151. Map of France and Belgium 6 00
152. Map of Italia Antiqua 16 00
153. Map of Italy 16 00
154. Map of Greece Antique 16 00
155. Set of ten Raised Maps 4 00
156. Map of Palestine 10 00
157. Plan of Jerusalem 6 00
158. Model of Mount Blanc 8 00

(*f*) *Physical Diagrams.*

159. View of Nature on Ascending Regions, showing mountains, Vegetation, &c $1 50
160. Map of the World on Mercator's Projection, showing the Physical Features of the Land 2 00
161. Map of the World do showing movements of the waters 2 00
162. Map of the World do showing distribution of Rain 2 00
163. Map of the World do showing distribution of climates 2 00
164. Map of the World do showing distribution of wind 2 00
165. Chart showing the volcanic system of the globe 2 00

(g) *Atlasses.*

166. Johnston's School Classical Atlas.
167. Irwin's Classical Atlas.
168. Physical Atlas of Natural Phenomena.
169. Johnston's Physical Atlas.
170. Imperial Atlas of Modern Geography.
171. National Atlas of General Geography.
172. Johnston's Elementary Atlas.
173. ——— General Atlas.
174. Cassell's Atlas for Beginners.
175. New Cabinet Atlas.
176. Walker and Mills' Atlas of the Dominion of Canada.
177. Tackabury's Atlas of the Dominion of Canada.

NOTE.—A large number of other Atlases can be seen on application to the officer in charge of the Department.

(h) *Miscellaneous.*

178. Geographical Lesson Sheets to accompany maps 0 50

(i) *Dissected Maps, Geographical Cubes, &c.*

179. Geographical Cubes, in neat box $1 75
180. do large size 6 00
181. The Little Geographer 1 75
182. Dissected Map of Europe.
183. do Asia.
184. do Africa.
185. do America.
186. do England.
187. do Ireland.
188. do Scotland.

Dissected Maps are useful adjuncts for teaching Geography to the young. They vary in price from 55c to $4 each.

2. ASTRONOMICAL ILLUSTRATIONS.

(j) *Celestial Globes, &c.*

189. 18-inch Celestial Globe, high bronze pedestal stand..... $50 00
190. 12-inch do do 20 00
191. 12-inch do low bronze frame. 14 00
192. Solar Telluric Globe 7 00
193. Celestial Sphere 6 00
194. do (French pattern).

(k) Orries' Planetariums, &c.

195.	Turnbull's Heliocoucentric Expositor of Terrestrial Motion	$160 00
196.	Planetarium, high stand	16 50
197.	Planetarium, low stand	12 50
198.	Planetarium (French pattern).	
199.	Brass-Geared Tellurian	12 00
200.	The Heliotellus	50 00
201.	The Lunatellus	30 00
202.	Globular Representation of the Moon	2 50

(l) Astronomical Charts.

203.	Smith's Solar System, &c., Diagrams, in one Chart	$3 75
204.	Johnston's Illustrations of Astronomy, the Solar System	2 50
205.	do do Astronomical Diagrams	2 50

CLASS VI.

Natural History.

This Class is extensively used for Object Teaching, also for the formation of School Museums.

The Education Department of Toronto fosters and encourages the formation of Museums in its Public Schools. Experienced educators are agreed that the spirit of enquiry and observation in the youth of both sexes should be stimulated, and that the most effectual manner of doing this is by giving School Prizes of Scientific Objects, Natural History Books and Specimens, Microscopes, &c., &c.

(Extract from a Circular issued by the Department.)

"FORMATION OF MUSEUMS LAID IN OUR PUBLIC SCHOOLS.

"There is no reason why in certain localities in Ontario, where fossils and minerals are abundant, the pupils should not be encouraged to make small collections for their schools. Whether the pupil can sufficiently appreciate the distinction between the specimens he may collect, so as to classify them, is not so material at first. He would naturally separate the different kinds he would collect, and under the direction of the teacher he could arrange them all nicely on the shelves of the little school museum. In every locality, objects of natural history, such as beetles, insects, leaves, flowers, &c., &c., might be collected in their seasons on Saturdays, and arranged for the amusement and instruction of both pupils and teachers. It is surprising, too, how rapidly these small school collections grow where the interest of the pupils in such matters is stimulated and encouraged by the intelligent teacher, aided by the trustees."

1. GEOLOGY, MINERALOGY, AND CRYSTALLOGRAPHY.

(*a*) *Geological Cabinets, &c.*

206. Set Fossils in Cabinet.. ..... $1 75
207. Set Rocks and Fossils in Cabinet..... 6 00
208. Collection of Specimens illustrating metals and their uses on a beautiful stand under Glass Shade..... ..... 5 00
This is very suitable for School Prizes and Museums and is accompanied with a Book explanatory of the places where they are obtained, how they are reduced and what they are used for.
209. Cabinet of Minerals and their uses..... ..... $2 00
210. Set of Minerals and Metals used in manufacturing..... 2 00

(*b*) *Crystallography.*

211. Set of Models of Crystals in glass. These are most beautifully executed, and are intended to illustrate Crystallography in the Lecture Room. They are also an important adjunct to School Museums.
212. Set of Models of Crystals exemplifying the primary forms..... $1 25

(*c*) *Geological Charts.*

213. Reynold's Chart showing the section of the Earth's crust $2 00

2. BOTANY.

(*d*) *Models of Flowers.*

These Models are fac-similes of Flowers on an enlarged scale. They are beautifully coloured, can easily be taken apart to illustrate Physiological Botany.

They are constructed of very durable material and are so classified that they can be used with either Gray's Botany or " How Plants Grow."

214. Grass Family—Common Meadow Grass.
215. Gentian Family—Swallow-wort Gentian.
216. Figwort Family—Purple Foxglove.
217. Rose Family—Garden Red Cherry.
218. Orchis Family—Military Orchis.
219. Evening Primrose Family—Common Evening Primrose.
220. Pink Family—Clove Pink.
221. Convolvulus Family—Wild Morning Glory.
222. Iris Family—Flower-de-luce.
223. Colchicum Family—Common Colchicum.
224. Sedge Family—Sedge (male and female.)
225. Violet Family—Pansy or Heart's-ease.

226. Spurge Family—Cypress Spurge.
227. Amaryllis Family—Snowdrop.
228. Lily Family—Turks' Cap Lily.
229. Poppy Family—Prickly Poppy.
230. Composite Family—Common Mayweed.
231. Willow Family—White Willow, (male and female.)
232. Crowfoot Family—Monkshood.
233. Mallow Family—High Mallow.
234. Crowfoot Family—Tall Buttercup.
235. Mustard Family—Cabbage.
236. Pulse Family—Ononis hircina.
237. Nightshade Family—Deadly Nightshade.
238. Parsley Family—Spotted Hemlock.
239. Orpine Family—Wall Pepper.
240. Mint Family—Hedge Nettle.
241. Seed Leaf and Root of Monocotyledonous Plant—Rye.
242. Seed Leaves and Root of Dicotyledonous Plant—Bean.

(c) Botanical Charts.

243. Henslow's Botanical Charts, set of nine charts beautifully coloured, containing several hundreds of diagrams and illustrations, price, on rollers 18 00
244. Departmental set of Botanical Plates, twenty charts illustrating seeds, roots, plants, &c., prepared to accompany the Text Book used in our schools, Gray's How Plants Grow, price, on cardboard and varnished 10 00
245. Set of Botanical Plates for elementary instruction, illustrating useful plants, the parts used in commerce, their preparation for food, medicine, &c.....

(d) Botanical Object Lessons.

246. Cabinet to illustrate the vegetable kingdom containing nearly two hundred specimens of articles used for the purposes of food, medicine, and clothing, and in the Arts and Manufactures..... $10 00
247. Oliver & Boyd's illustrations of the vegetable kingdom..... 5 50

(e) Miscellaneous.

248. Apparatus for collecting plants..... $8 00

This is put up in a portable form, and is very convenient for the teacher to take with him when botanizing with his pupils.

2. ZOOLOGY.

(*a*) *Zoological Specimens.*

The Department recognizing the importance of teaching Zoology in the schools supply typical collections of stuffed specimens of Mammalia, Birds, Reptiles, Fishes, &c. These can either be obtained mounted on plain stands, or, put up in glass cases, so arranged as to show their natural habits.

These are arranged to accompany the Text Book used, Nicholson's Outlines of Natural History.

Vertebrate Animals.

Sub-Kingdom—Vertebrata.

CLASS I—PISCES (Fishes).

Order, Teleostei.

249. Herring.
250. Perch.
251. Bass.

Order, Ganoidei.

252. Pike.
253. Sturgeon.

CLASS II—AMPHIBIA (Amphibious).

Order, Anoura.

254. Bullfrog.
255. Common Frog.

CLASS III—REPTILIA (Reptiles).

Order, Chelonia.

256. Tortoise.

Order, Ophidia.

257. Snake.

CLASS IV—AVES (Birds).

Order, Natatores (Swimmers).

258. Swan.
259. Great Northern Diver or Loon.
260. Crested Grebe.

Order, Grallatores (Waders).

261. Heron.
262. Snipe.
263. Water-Rail.

Order, Rasores (Scratchers)

264. Prairie Hen.
265. Ruffed Grouse.

Order Scansores (Climbers).

266. Woodpecker.

Order, Insessores, (Perchers)

267. Blue Jay.
268. Blue Bird.
269. Grosbeak.
270. Oriole.
271. Swallow.
272. Kingfisher.

Order, Raptores (Birds of Prey).

273. Snowy Owl.
274. Hawk.

CLASS V. MAMMALIA (Mammals).

Order, Carnivora.

275. Canada Lynx.
276. Racoon.

Order, Rodentia.

277. Porcupine.
278. Canada Beaver.
279. Squirrel.
280. Flying Squirrel.

Order, Cheiroptera.

281. Large Bat.

Order, Insectivora.

282. Mole.

Order, Quadrumana.

283. Monkey.
284. Marmoset.

Insects, &c.

285. Case containing Silk-worm, showing specimens of its metamorphosis, silk, and mulberry leaves, &c.

This is of great interest to the young, and imparts an important lesson in Natural History on the wonderful change that takes place in insect life.

286. Case of Bees at work, showing honey-comb, &c.

(*b*) *Zoological Diagrams.*

287. Patterson's Zoological Diagrams, set of 10 charts, price, on rollers $20 00
These are beautifully coloured, and have specimens attached illustrating Mammalia, Birds, Reptiles and Fishes.
288. Departmental Zoological Chart No. 1, Invertebrate—Insects.
289. do do do No. 2, Vertebrate—Fishes.

Fishes, Amphibia, Reptiles, &c.

290. Departmental Zoological Chart No. 3, Aves—Birds.
291. do do do No. 4, Mammalia—Mammals.
292. Macallum's Chart of Natural History, or Empire of Nature, with hand-book $1 38

(*c*) *Natural History, Object Lessons with Reading.*

293. Set of 24 plates of Scripture Natural History, beautiful colours, large print, price, in sheets 1 50
294. Set of 18 plates of Natural History, coloured, large print, price, in sheets 1 00
295. Set of 210 plates of Natural History, covered with descriptive letter press, price, in sheets 8 40
296. The Zones of the Earth, a set of plates in portfolio, showing the inhabitants of the various Zones ; most useful in teaching Natural History and Physical Geography 5 00
297. Oliver and Boyd's Object Lesson Cards of the Animal Kingdom 5 50

(*d*) *Kindergarten Natural History Object Lessons.*

298 Alphabet of Animals $1 00
299 The Birds, beautiful coloured blocks 2 50
300 The Fishes, do do 1 25

4. ETHNOGRAPHY.

This section of the Catalogue contains busts of representative men, celebrated in History, Arts, Science, &c., in different parts of the world.

The usual system is to keep these busts in the school-room so that the Students, in addition to the class instruction they receive, may, at their leisure, examine them.

As most of the examples exhibited are reduced copies (but most faithfully and accurately made) the cost is but trivial compared to the amount of good done by the lasting impression made in the minds of the pupils. There is also a taste for the beautiful inculcated, and it makes the School-

room look more cheerful and better furnished when adorned with works of Art.

(*a*) *Busts, Life Size.*

301. Queen Victoria.
302. Prince Albert.
303. Prince of Wales.
304. Princess of Wales.
305. Shakespeare.
306. Sir Isaac Newton, Philosopher.
307. Herschel, Astronomer.
308. Faraday, Chemist.

(*b*) *Busts, Reduced in Size.*

Ancient.

309. Homer, Greek Poet, B. C. 1000.
310. Demosthenes, Greek Orator, B. C. 385.
311. Aristotle, Greek Philosopher, B. C. 384.
312. Cicero, Roman Orator, B. C. 106.
313. Galen, Greek Philosopher and Medical Writer, A. D. 131.

Modern.

314. Thomas d'Aquin, Roman Doctor and Scholastic Teacher, 1225.
315. L'Hopital, French Statesman, 1505.
316. Paré, French Surgeon, 1509.
317. Montaigne, French Philosopher, 1533.
318. Ribera, Spanish Jesuit Writer, 1537.
319. Malherbe, French Poet, 1555.
320. Etienne, French Painter, 1503.
321. Descartes, French Philosopher, 1596.
322. Mazarin, Italian Cardinal, 1602.
323. Lebrun, French Painter, 1619.
324. Molière, French Author and Dramatist 1622.
325. Bossuet, French Divine and Orator, 1627.
326. Boileau, French Poet and Satirist, 1636.
327. Racine, French Dramatist, 1639.
328. Franklin, American Philosopher and Statesman, 1706.
329. Rousseau, Swiss Philosopher, 1712.
330. Diderot, French Philosopher, 1712.
331. L'Abbé de L'Epee, French Priest, Inventor of deaf and dumb signs, 1712.
332. D'Alembert, French Philosopher, 1717.
333. Malesherbes, French Judge and Philanthropist, 1721.
334. Greuze, French Painter, 1726.

335. Beaumarchais, French Dramatist, 1732.
336. Saint Pierre, French Littérateur, 1737.
337. Delille, French Poet, 1738.
338. Gretry, Belgian, Opera Composer, 1741.
339. Lavoisier, French Chemical Philosopher, 1743.
340. Alfien, Italian Poet, 1749.
341. Jacquard, French Inventor (weaving, &c.), 1752.
342. Canova, Italian Sculptor, 1757.
343. Chateaubriand, French Author, 1768.
344. Nodier, French Littérateur, 1783.
345. Dupin, French Orator and Statesman, 1783.
346. Byron, English Poet, 1788.
347. Lallermand, French Medical Writer, 1790.
348. Lamartine, French Littérateur, 1792.
449. De Balzac, French Novelist, 1799.
350. Von Liebeg, German Chemist, 1803.

Statuettes.

351. The Emperor Rupertus.
352. John I., Elector of Saxony.
353. Louis V., Emperor of Germany.
354. Albert IV., Duke of Austria.
355. Albert V., Duke of Austria.
356. Maximilian I.

5. ANATOMY AND PHYSIOLOGY.

(*a*) *Anatomical Models, &c.,*

357. Anatomical Model, shewing the viscera in position..... $25 00
358. Set of Anatomical and Physiological Models..... 15 00

No. 1. Model, life size, shewing the organs of circulation, respiration, &c., the lungs and heart are movable, showing the bronchial tubes, valves of heart, diaphragm, &c.

No. 2. The *lower* jaw (enlarged), shewing the teeth in their various stages of growth, their nerves, arteries, &c.

No. 3. An enlarged model of the skin, shewing the epidermis, the perspiratory glands, hair follicles, with the various arteries, nerves, &c.

This is a very complete set, illustrating all that is usually taught on the subject in Public and High Schools. The models are beautifully coloured from nature, and are made of strong material.

359. Model of the Human Eye... .. .. $5 00

Anatomical and Physiological Diagrams.

360. Marshall's Physiological Diagrams, set of nine $35 00
1. The Skeleton and Ligaments.
2. The Muscles, Joints and animal mechanics.
3. The Viscera in position; the structure of the lungs.
4. The Heart and blood vessels.
5. The Lymphatics and Absorbents.
6. The Digestive Organs.
7. The Brain and Nerves.
8. Organs of the Senses.
9. The Textures—microscopic structure.

These plates are 3 feet 8 inches wide and 9 feet long, each on a single sheet of paper. Steel plates and paper had to be expressly made for the purpose, and a leviathan press designed and perfected to permit so large a sheet to be printed in colours.

361. Johnstone's Anatomical and Physiological Diagrams, two Charts with hand books $5 00
Plate I. The Bones.
do II. The Ligaments.
do III. The Muscles.
do IV. The Heart and Arteries.
do V. Veins and Organs of Respiration.
do VI. Lymphatics and Organs of Digestion.
do VII. The Brain and Nerves.
do VIII. The Senses.

CHEMISTRY.

I. Apparatus for Teaching the Elements of Chemistry.

(a) Chemical Laboratory.

362. Chemical Laboratory to illustrate experiments in Roscoe's Chemistry $22 00
363. The Teacher's Laboratory, containing twenty-four pieces of useful apparatus and seventy chemical reagents, &c., in a wooden cabinet, with a Book of Instructions to perform over 200 amusing, instructive and useful experiments, price 10 00
364. The Elementary Set of Chemicals and Chemical Apparatus, containing 24 pieces of apparatus and 20 bottles of chemicals for experiments in Oxygen, Hydrogen, Water, Nitrogen, the Atmosphere, Nitric Acid, Nitrogen Dioxide, Nitrogen Monoxide, Ammonia, Carbon and Carbonic Acid Gas, Iodine and Phosphorus, in a neat wooden Cabinet 10 00

This Set is specially adapted for Teachers and University Students preparing for examination.

365. The Student's Laboratory contains seventy chemical reagents and twenty pieces of apparatus suitable for performing two hundred experiments, in a wooden box $6 00

366. The Cabinet of Chemical Wonders, a parlour magic, chemicals, &c., to perform 70 amusing, instructive and useful experiments in the magic of science, price 5 00

367. The Boy's own Laboratory—fifty chemical preparations and pieces of apparatus to perform 150 experiments, in a neat box 1 25

368. Scientific Wonder Box, twenty chemicals, &c., to perform 50 experiments 0 50

(*b*) *Apparatus for Experiments with Gases.*

369. The School Gas Holder, price..... $ 7 50
This Gas Holder is made of japanned zinc; it is graduated into spaces of fifty cubic inches, and will hold 1,500 cubic inches. If the glass tube of gauge pipe should be broken, the instrument is so constructed that it can easily be replaced.

370. Hydrogen Gas Bottle, with wash bottle, delivery tube, &c., complete 2 50

371. Wash Bottle 0 50

372. Glass Retort for the preparation of oxygen..... 1 75

373. do do ..... 25c. and 50c.

374. Metal Oxygen Retort for preparing the gas in quantities of five or six cubic feet..... 3 50

375. Purifier for do. 2 50

376. Pneumatic Trough, with glass sides and ends..... 20 00

377. do do tin 2 40

378. Large Glass Globe for burning phoshorus in oxygen..... 1 50

379. Metal Cup on iron foot, to contain the phosphorus to be burnt in the oxygen globe 50

380. Woulff's Bottles for preparing, washing or condensing gases with two and three necks, different sizes; various prices

381. Eprouvettes or Deflagrating Jars for the collection and explosion of gases ..... 60 & 90

382. Dobereiner's Hydrogen Lamp, for the instantaneous and constant production of light, by the action of spongy platinum upon hydrogen gas 4 00

383. Gas Jar for the analysis of gases, graduated into centimeter cubes, so as to show the weight of a gas from the measure... 2 00

NOTE.—For the production of gases that demand the aid of heat, glass vessels should be selected that are thin at the bottom, otherwise they split when heated. If heat is not required, the most servicable flasks, &c., are those with flat, strong bottoms, as they do not readily break or overturn when rendered top-heavy by the tall acid funnels and other fittings.

The principal Gases that require heat are Oxygen, Chlorine, Ammonia, Muriatic Acid and Sulphurous Acid. Those in most frequent use, made without heat, are Hydrogen, Carbonic Acid and Sulphuretted Hydrogen.

384. Cavendish's Eudiometers for showing the production of water by the combination of oxygen and hydrogen gases, when the mixture is exploded by the electric spark $14 00
385. Hoffman's U. Tube to show the volume of hydrogen in hydrochloric acid 5 50
386. Apparatus for explaining the production of sulphuric acid by the action of nitric oxide gas and sulphurous acid gas on steam 4 00
387. Apparatus for showing the preparation of coal gas by the distillation of coal.
388. Apparatus for the production and purification of chlorine gas.
389. Glass jar, with stopcock, for collecting gases 4 00
390. Glass Flasks for gases, &c., various sizes and prices.....
391. Adapter for connecting Retort and Gas Jar plane 0 40
392. do do bent or curved 0 45
393. Retort Stand with heavy iron base, three rings with thumb screws 2 75

(c) Apparatus for determining the specific gravity of Liquids.

394. Specific Gravity Bottle, carefully adjusted with ground stopper and counterpoise $2 00
395. Hydrometer, with tall Test Jar for showing direct specific gravity 4 00
396. Saccharometer for showing the specific gravity of solutions of sugar 1 20
397. Oleometer for showing specific gravity of oils. 1 20

(d) Chemical Thermometers.

398. Chemical Thermometer with scale etched on tube 1 10
399. do do inside milk glass scale 2 00
400. do do inside ivory scale 2 00
401. do do inside paper scale 1 00

These Instruments have the scales either etched upon the glass tube, or, they are upon ivory, milk glass, paper, etc., enclosed within a glass tube. They are made without fittings of wood or metal, so that they can be immersed in hot, caustic or acid liquors without danger of breaking.

(e) Chemical Apparatus for Applying Heat.

402. Glass Spirit Lamps with ground glass caps, different prices ..... 40c. to 70c.
403. Russian Spirit Lamp, well adapted for all purposes where a powerful heat is required for a short time, as in igniting platinum, bending glass tubes, &c..... $2 70

404. Conical Blowpipe, japanned tin plates..... $0 20
405. Bergman's Blowpipe, with spherical condenser and brass nozzle. 0 80
406. Brass Blowpipe, with ivory mouthpiece and two brass nozzles. 1 00
406½. Sprengel's Catalan Blowpipe, which gives a constant stream of air sufficient for all analytical operations with the blowpipe 4 00

(f) Apparatus for Weighing.

407. Chemical balance in mahogany glass case, with apparatus for moving a rider on the beam, outside screw to put the beam in motion, hook for supporting potash bulbs, &c. Power to carry 100 grammes and indicate $\frac{1}{4}$ milligramme, with, 1600 grammes to show $\frac{1}{800}$ grain $90 00
408. Set of Standard Gramme Weights, justified according to the Platinum Kilogramme of Dr. Schumacher in Altona, with ivory tops and a mahogany box..... 7 00
409. Common Chemical Balance with weights..... 2 00

(g) Apparatus for Distillation, &c.

410. Working mould of a still with metal condenser, receiving jar, &c..... $6 00
411. Apparatus for the distillation of small quantities of liquor, such as alcohol from wines, ammonia from gas liquor, &c.... 6 00
412. Glass Aspirator or water bottle..... 4 00
This vessel can be used either as an aspirator to draw gases through liquids or to supply the condensing water required in distillation.

(h) Apparatus for testing Alkalies, Mercury, Hot Solutions, &c.

413. Alkalimeter for testing ammonia in gas liquors..... $1 20
414. Stoppered Test Mixer, a cylindrical jar, on foot graduated into centimeter cubes for mixing and diluting various quantities of test solutions..... 3 50
415. Glass Syphon, with suction tube for removing liquids from precipitates..... 0 75
416. Plain Glass Syphon 0 15
417. Pipette for dropping liquids, different shapes..... 0 12
418. Beaker Glasses for hot solutions, in nests of from 3 to 15 Beakers in each set, various.
419. Porcelain Evaporating Dishes, various sizes.

(i) Supports for Apparatus.

420. Universal support with attachments for holding apparatus.. $3 00
421. Loaded stand, with two supports..... 1 00

422. Funnel holder $0 50
423. Test Tube holder 0 35

(j) *Miscellaneous.*

424. Glass pestle and mortar $0 50
425. Porcelain pestle and mortar 0 50
426. Set cork borers 1 60
427. Glass Funnels various sizes, from ..... 15c. to 1 20
428. Ribbed Porcelain Funnels, various prices.
429. Percolators and Separating Funnels from ..... 45c. to 1 50
430. Spatulas, different sizes.
431. Hessian and other Crucibles on rests, various prices.
432. Marsh's apparatus for the detection of Arsenic contained in solutions of organic matter.

2. CHEMICAL DIAGRAMS.

433. Chart containing 20 coloured Diagrams, illustrating Organogens or Generators of Organization, Halogens or Salt Formers, Pyrogens or Fire Producers and Hyalogens or Glass Formers $1 20
434. Chemical Chart (organic) showing non-nitrogenized alimentary principles, nitrogenized and sulphurized principles, examples of isomerism and compound radicles 1 50
435. Chemistry of Geology of the Soil and Chemistry of the Sunbeam, together with a Tableau, illustrating some of the effects of solar influence on terrestrial nature 1 50
436. Chemistry of Light and Combustion, and Chemistry of Animal and Vegetable Life 1 50
437. Chemical Physics, illustrating specific gravity, attraction, of gases, heat and its chemical relations and crystallization 1 50
438. Chemical Chart, showing Table of the Elements, with symbols, &c., also chemical combinations 1 50

PHYSICS AND MECHANICAL SCIENCE

I. Pneumatics.

(a) *Apparatus for Exhausting and Condensing.*

439. Air Pump, with two glass cylinders, a most beautiful and complete instrument with syphon, gauge and bell glass receivers with cut-glass knobs, &c., on a mahogany table, with drawer containing wrenches, clamps, &c. $150 00

The advantages of this instrument are that the pistons and valves in the cylinders can be seen when it is worked; its exhausting power is also very great, the residue of air left in the receiver, when carefully exhausted, is only 1 in 600. To produce good exhausting power with any air pump care must be taken to keep the pump well oiled. This can be done by pouring a tea-spoonful of oil into the hole in the centre of the exhausting plate ; a few strokes of the piston are sufficient to convey the oil to all the internal parts and put the machine in good working condition. The ground edges of the receivers should be well cleaned and smeared with tallow or prepared lard, before they are put on the air pump plate.

440. Carre's Air Pump and Freezing Apparatus $140 00

This instrument will be found very useful in the lecture room and laboratory.

It combines the advantages of an ordinary air pump, a dessicating apparatus and a freezing apparatus.

When used for drying salts or for freezing water, the aqueous vapour is caused to pass over sulphuric acid contained in the horizontal cylinder. It freezes water in two or three minutes.

441. Public School Air Pump, with 8 inch plate, an excellent and reliable instrument for all ordinary purposes..... 22 00

442. Air Pump, with barrel 7 x ½ inches, walnut base, plate 6 inches 12 50

443. Air Pump with bell glass, a beautiful little instrument for a school prize 6 50

444. Guinea and Feather Apparatus, tall conical receiver, and sliding rod plate, with drop plates for showing that a feather falls with the same velocity as a piece of metal when the air is exhausted..... 12 00

445. do do small size 4 50

446. Fountain in Vacuo with jet, etc., for producing an artificial fountain, a very striking experiment for illustrating the pressure of the atmosphere..... 7 00

447. do do smaller size 4 00

448. Apparatus for illustrating the weight and buoyancy of air, ? inch glass globe with stopcock; also scales, weights and counterpoise 8 00

449. Magdeburgh Hemispheres for exhaustion, stopcock, handles and stand 6 00

450. do do smaller size... ..... 4 00

451. Upward Pressure Apparatus with glass cylinder, brass cap, tripod stand, leather strap and weight (price of syringe, $4.80) 5 50

452. Transfer Jar, for exhaustion under bell glass of air pump 6 50

453. Apparatus to illustrate elasticity of air, consisting of bladder and lead weights in a neat stand 2 00

A small quantity of air is left in the bladder, with the neck securely tied; the weights are then placed on top when the surrounding air contained in a bell glass is exhausted, the small quantity of air in the bladder expands and by its elasticity raises the heavy weights.

454. Copper Globe for exhausting, to form fountain with jet, etc., complete 8 00

455. Hiero's Fountain, a beautiful glass instrument for the lecture room.....

456. Apple Cutter with bell glass, complete for exhaustion 1 70

457. Bell Glass Receiver for air pump, with stopcock..... 4 00

458. Bell Glass Receiver with knob at the top, small size, $2 00; largest size 7 00

459. Model of Pump 1 25

(b) Meteorological Instruments, &c.

460. Standard Barometer, with boiled glass tube $\frac{5}{8}$ of an inch in diameter, reservoir $2\frac{1}{2}$ inches in diameter, reading from an ivory point, mounted in a brass frame with external thermometer, showing Centigrade and Fahrenheit scales—vernier worked with rack and pinion, so graduated as to read the 500th of an inch 70 00

An instrument of the same size with the reservoir of iron is kept for sale in the Depository 36 00

461. Self-Registering Maximum Thermometer, graduated on its own stem 9 00

462. Self-Registering Mininum Thermometer graduated on its own stem 9 00

463. Hygrometer—Wet and Dry Bulb Thermometers, graduated on stems 18 00

464. Rain Gauge (Glaisher's) with graduated measuring glass..... 9 00

465. Set of Meteorological Reports, Abstracts, Instructions, Hygrometrical Tables, etc..... 7 00

These instruments and books can be recommended as reliable, being of the same kind as those in use for the past fifteen years in the Meteorological Observatories connected with the High Schools and Collegiate Institutes of Ontario. A Barometer of the same size, without glass cylinder, can be supplied for $36 00.

466. Aneroid Barometer beautifully carved, rosewood frame..... 30 00

467. Metallic Barometer..... 20 00

468. Daniell's Hygrometer 4 50

(c) *Charts and Diagrams.*

469. Principles of Pneumatics and mechanical properties of air. The barometer, the air pump, balloon, diving bell, &c..... $1 50

470. The Barometer and its uses, showing construction of barometer, chart of the atmosphere, &c. 1 50

1. *Acoustics.*

471. Tate's Air Pump, with 7 inch plate and clamp to fix it securely to the table.....$14 00

This pump will freeze water over sulphuric acid in a receiver of 300 cubic inches, in 150 strokes at about 60° Fahr., and in half that number of strokes at about Fahr.

It is a very convenient form of pump for use in different localities, being easily fastened by the clamp to an ordinary table.

The round box at the end of the pump cylinder is intended to catch the oil of which more or less is expelled from the pump with the air at every stroke. From time to time the oil should be removed from the box.

472. Bell glass Receiver for air pump..... ..... 2 00

473. Bell, with clock work, to be rung under exhausted receiver... 16 00

474. Sliding rod for ringing bell, &c., in vacuo 2 50

475. Small bell for ringing under air pump..... 1 50

476. Bell in glass globe, with stopcock to screw on to air pump, a cheap and reliable instrument 6 00

477. Hydrogen, Bottle, for producing the jet of gas known as the Philosopher's candle 0 75

478. Glass tubes of various diameters to produce a series of sounds with the hydrogen jet..... 0 60

479. Water Hammer for illustrating sound produced in vacuum.. 1 00

480. Water Hammer to screw on exhausting syringe..... ... 2 00

481. Exhausting Syringe 4 80

3. *Light—Optics.*

482. Large Binocular Microscope, with moveable diaphragm, fine adjustment, &c., with two sets of eye pieces, but without object glasses $250 00

483. Binocular Miscroscope, complete, with good object glasses, polarizing apparatus, &c.....110 00

484. Compound school Microscope in mahogany case, with object glasses, &c., complete, mounted on firm tripod stand..... 14 00

485. Compound School Microscope, with bell, socket, stand and triplet object glasses.. ..... 15 00

486. The Public School microscope for botanical purposes, &c.... $4 00
487. Compound Microscope for school prize..... 2 75
488. Simple do do 0 90
489. Seed Microscope do .....20c to 45c
490. Magic Lantern for dissolving views, double mahogany case, with rack work movement, improved condensing lenses, oxycalcium light apparatus, consisting of oxygen retort, purifier, flexible tubing, gas bag, &c., complete 100 00
491. Magic Lantern with 3½ lenses, so constructed as to be used for long or short focus, easily adjusted, a most complete instrument, will produce a picture 15 to 20 feet in diameter 18 50
492. Magic Lantern for school prize 6 50
493. Polarizing apparatus for magic lantern 18 00
494. Photogenic Lantern for electric light apparatus..... 80 00
495. Dubosq's Electric Lamp with Groves' battery, price in proportion to number of cups required.
496. Magnesium Lamp with coil of magnesium ready for use..... 18 00
497. Sir Humphry Davy's Safety Lamp, brass body with gauze covering..... 5 50
498. Brass Mounted Telescope on stand..... 40 00
499. Telescope, three draws, good instrument 10 00
500. do do school prize..... 4 00
501. Chairomorphoscope, a patent kaleidoscope... ..... 0 70
502. Kaleidoscope 1 00
503. Kaleidoscopic top 1 25
504. Atmospheric Optic Marvel..... ..... 0 55
505. Revolving Disk, for decomposition of light.....
506. Camera Obscura 1 60
507. Spectroscope..... 30 00
508. Black Screen, with aperture on stand 3 00
509. Ground Glass Frame to receive images, in frame on a stand.. 3 50
510. Model of the human eye..... 5 00
511. Brass Model of Eye, explaining short and long sight, &c.... 6 50

4. HEAT AND STEAM.

(*a*) *Apparatus.*

512. Tyndall's Apparatus for showing the heat developed by friction, consisting of a multiplying wheel, which is capable of making a bottom copper cylinder rotate with great velocity..... 15 00
If some spirit or water is put into the cylinder and it is set on motion, while a pair of hinged oak boards are pressed against it, the heat developed will cause the liquid to boil.
513. Concave Reflectors, of copper, silvered, with iron stands upon which they can be placed to any required height .....

514 Fire Syringe to show the production of fire, by the rapid compressure of air, with box of German tinder..... $1 10

515. Bologna Vials for showing the brittleness produced in glass, which has been suddenly cooled, if anything with a rough edge is dropped into them, they fly to pieces 0 10

516. Ingenhouz's Apparatus for showing the different conducting powers of metals: a metal trough to contain hot water, with 6 lateral tubulures for rods of different metals, which are to be coated with wax 5 00

517. Ring of wood, on which are fixed four bars, viz., copper, iron, zinc and steel, which may be heated by a lamp placed in the centre 1 60

518. Gravesande's Pyrometer, a brass ball, which when cold will pass through a ring, but will not do so when slightly heated with a spirit lamp, on brass support, with wooden stand..... 1 75

519. Ferguson's Pyrometer for showing expansion of rods of different metals, by means of an indicator on a vertical dial 6 50

520. Gauge and Bar, consisting of a cylindrical bar of iron, which will fit into the brass gauge when cold, but will not when heated 1 20

521. Compound bar of copper and iron, to show unequal expansion 50

522. Tyndall's Apparatus to show the unequal expansion of iron and brass, by the completion of a voltaic current due to the elongation of the brass rod by heat..... 8 00

523. Wollaston's Cryophorus, to show the freezing of water due to rapid vaporization. 1 00

For Thermometer, see Chemistry.

524. Working model of locomotive engine with tender attached, spirit lamp, &c..... 12 00

525. Vertical Stationary Oscillating Engine, with lamp, &c., can be used for spinning glass 8 00

526. do do smaller size..... 3 00

527. Horizontal Oscillating Engine, brass boiler with spirit lamp, &c 10 00

528. Miniature Model of Beam Engine..... 1 00

529. Large Sectional Model of Locomotive Steam Engine moving internal valves, steam-pipes, pistons in chamber, &c. .....

530. Large Sectional Model of Beam Engine, with stationary boiler, &c.....

Diagrams.

531. Johnson's Chart of Steam Engines, with numerous diagrams. 2 50

5. ELECTRICITY.

(a) *Frictional Electricity.*

532. Carre's Electrical Machine..... .....$160 00

This is one of the most simple and powerful machines invented for producing electricity on the principle of induction; having ebonite plates, it is the least sensitive to the humidity of the atmosphere. It is charged in a few seconds, and retains its working power for a long time. This machine will give a good succession of powerful sparks 5 to 10 inches in length, and will billiantly illuminate Geissler's tube, and with it nearly all the experiments usually requiring a Ruhmkorff's Coil can be performed.

533. Van Marum's Electrical Machine $120 00

This machine has two large glass plates, insulated cushions and brass conductors, and is adapted to produce at pleasure either positive or negative electricity.

534. Winter's Plate Electrical Machine 150 00

This machine was designed by Carl Winter, of Vienna. The attraction of the electricity from the glass is made by a row of points placed in the grooves inside of two wooden rings which are attached on each side of the plate by arms of wood containing wire in the centre, which project horizontally from the ball of the conductor. The grooves are covered with tin-foil which conveys the collected electricity to the ball.

The most peculiar feature of Winter's machine is a large wooden ring which is removable at pleasure. It consists of an iron wire bent into the shape of a ring, covered with polished wood and communicating by a brass pin at the foot of the stalk on which it stands, with the prime conductor.

It is claimed to produce larger sparks than the ordinary machine of the same size, owing to the considerable distance between the rubber and prime conductor, which prevents the occurrence of discharge between them.

535. Plate Electrical Machine, 16 inch ebonite plate with brass conductor in mahogany stand 38 00

536. Bertsch's Electrical Machine 30 00

This machine has been called a rotatory Electrophorus. A circular plate of ebonite is made to revolve rapidly, a section of the same material, previously excited by friction, is fixed opposite the lower portion of the plate, and on the other side immediately opposite to this is a metallic comb forming the extremity of a conductor connected with the earth.

This machine does not furnish means for increasing or even sustaining the charge of the armature. In this respect it resembles the ordinary Electrophorus.

537. Ramsden's Electrical Machine..... $12 00

This machine, with slight improvements, is one of the earliest plate machines invented, and is certainly the cheapest that can be obtained for Public Schools.

538. Cylindrical Electrical Machine, suitable for school prize... 8 00

539. Electrical Machine, with ebonite plate for school prizes.... 8 50

Note.—Before using electrical machines, the glass legs which support the conductors should be wiped with a warm dry cloth. The plates should also be cleaned from any dust or amalgam adhering to them and then rubbed with a dry cloth or silk handkerchief. If the weather is damp place the machine near the fire.

540. Electrophorus, consisting of a 10 inch plate, of resin &c., and a brass cover with glass handle 2 25

When electricity is required in small quantities it is readily supplied by this simple apparatus. The resin disc is electrified by striking or rubbing it with a piece of fur or flannel and the metal plate is then laid upon it. If the upper plate is then touched with the finger (to connect it with the earth) it receives an opposite charge by induction. On lifting it away by its insulating handle, it is found to be charged and will give a spark.

541. Rod of Sealing Wax for producing electricity 0 60

542. Leyden Jar filled with metallic foil..... .....60 to 1 20

543. Electric Battery, consisting of four Leyden Jars on mahogany stand... ... . 8 00

544. Harris's Unit Jar, with graduating sliding rod for charging Leyden Jars, &c., with known quantities of electricity..... 6 00

545. Electrical Discharger, jointed, with glass handle..... 2 40

546. Henley's Universal Electric Discharger, with table, press, insulators, holders, &c.

547. Electrical Discharger and stand..... ..... 3 40

548. do with cup for ether..... 3 40

549. Leyden Jar with movable coatings.

This jar can be discharged by alternate contacts.

550. Conical Conductor of Brass, insulated on glass support..... 25 00

This instrument is for the purpose of showing that the electric tension is found to be least at the thickest part, and to increase towards either end being greater as each end becomes more and more pointed.

551. Gold Leaf Electroscope..... .... 6 00

An electroscope is an instrument for detecting the presence of electricity and determining its sign. To test whether a body is electrified it is brought near the top of the electroscope. The like electricity is repelled into

the leaves and makes them diverge, while the unlike is attracted into the ball. Great caution must be used in bringing electrified bodies near the gold-leaf electroscope, as the leaves are apt to be ruptured by quick movements.

552. Coulomb's Torsion Balance $10 00

This instrument is used for explaining the law according to which electrical repulsions and attractions vary with the distance, proving that the force of electrical repulsion varies *inversely as the square of the distance.*

553. Spiral or Spangled Tube ..... 1 40 and 8 00

These tubes are used for multiplying the electric spark. If one of the brass ends is put in communication with the machine and the other with the earth the discharge passes through the whole series of small pieces of tin foil.

554. Diamond or Luminous Jar 2 90

555. Sparkling or Luminous Plate 2 40

These also illustrate the same principle as the Spiral Tubes.

556. Electrical Pistol 1 00

557. do do a bomb 2 00

558. Thunder House 1 00

559. Electric Bucket or Watering Pot 0 60

When this vessel is not electrified the water comes out drop by drop; but if it is suspended from the conductor of an electrical machine, or when the machine is turned, the water issues in continuous fine streams.

560. Electrical Orrery 6 00

561. Electrical Sportsman, with birds on stand, to shoot by the electric discharge 10 00

562. Insulating Stool, small size 2 40

563. Insulating Stool, with glass legs mounted on brass caps 10 00

564. Set of six various pieces of electrical apparatus to use with small electric machines 6 00

565. Electrical Vane, for revolving by electricity 0 60

566. Electric Head of Hair 1 00

567. Set of Electrical Bells or Electric Chimes 20 00

568. Electric Egg, for showing spark in rarified air 14 00

569. do do do do 5 50

When the glass vessel contains air at atmospheric pressure, a spark passes in the ordinary way between the two knobs, but if it is exhausted by aid of the air pump, the aspect of the spark changes.

At a pressure of 1-13th of an atmosphere the rays form a sort of ramified sheaf, the light at the positive knob being of a reddish purple, and the rays from the negative end being of a violet colour.

In performing the experiment the upper knob is connected with the electrical machine, and the lower one with the ground.

570. Exhausting tubes for showing Aurora Borealis experiment.. $7 50
571. Dancing Image Plates..... 2 40
572. do do 1 25
573. do Figures for Dancing Plates, per pair..... 0 60
574. Globe for Electric Spark..... 1 75
575. Illuminated Egg Stand..... 1 30
576. Cuthbertson's Balance Electrometer..... 12 00

This instrument is used for regulating the strength of a Leyden Jar, requisite for fusing different lengths of wire, experimenting on metallic oxides, &c.

(*b*) *Voltaic Electricity, Magnetism, Electro Magnetism, &c.*

577. Groves' Battery, set of four cells in a tray $14 00

This Battery consists of Glass Jars containing zinc cylinders, porous cups and platinum plates; the exciting fluids are diluted sulphuric acid, $\frac{1}{8}$ for the outer cell and strong nitric acid for the inner cell.

578. Bunsen's Battery, six cups on a tray..... 24 00

This Battery has flat outer cells of glass, bent zinc plates, flat porous cells and carbon plates.

The exciting fluids are the same as used with Groves' Battery.

579. Carbon Battery, single cell, circular form.....2 25 to 8 00
580. Smees' Battery, four cups on tray..... 13 00

This Battery consists of platinized silver plate in a wooden frame with a zinc plate on either side in glass cells; the exciting liquid is diluted sulphuric acid 1 to 7 parts of water.

581. Daniell's Battery, 4 quart cells in tray 13 00

The exciting liquids are for the upper cell, solution of sulphate of copper, and for the porous cell diluted sulphuric acid.

582. Leclanche Battery, 4 cells..... 5 00
do do do ..... 1 25 to 2 00

The Leclanche Battery is very useful for electric bells, &c., where constancy is required, the exciting liquid is a solution of sal-ammoniac.

583. Decomposition of Water Apparatus for collecting the gases separately..... 5 50
584. do do do 3 40
585. Decomposition of Water Apparatus to collect both gases in one tube 4 50
586. Hoffman's Apparatus for Electrolysis 6 00

587. Model of Electric Telegraph, complete $7 50
588. Home and School Telegraph Battery, &c., complete 2 00
589. Contact Breaker or Commutator 3 00
590. Stand for illuminating wire by Galvanic Battery 4 00
591. Electro-magnetic Bell to be suspended in the centre of a room. 16 00
592. Electric-magnetic Bell for a table 20 00
593. Electro-magnetic Bell for wall ..... 2 75 to 4 20
594. Electro-gilding and Plating Apparatus, with 4 Smees' batteries in a tray, depositing trough, &c., complete 18 00
595. Electrotyping Apparatus complete in a box 6 50
596. Leyden Plate 2 00
597. Vacuum Tube set consisting of Bichromate Potassa Battery, Ruhmkorff's Coil Geissler's Tubes, conducting wires, &c., complete in a box, price 7 50
598. Vacuum Tubes, Geissler's, for showing the passage of the electric current through a vacuum, and different gases 7 00
599. do do do 4 00
600. Apparatus for Revolving Geissler's Tubes by aid of a Galvanic Battery 15 00
601. Mirror for Geissler's Tubes 4 00
603. Galvanometer, under glass shade, with horizontal index, dial, &c., complete 9 00
604. Oersted's Galvanometer, with needle 2 10
605. Astatic Galvanometer, under tall glass shade, the stand provided with adjusting screws 16 00
606. Thermo Pile of 24 pairs of Bismuth and Antimony, in a brass frame, mounted on brass stand 10 00
607. Barton's Electric Wheel 4 00
608. Revolving Electro Magnet 9 50
609. Electric Pump for delivering a stream of water by means of the electric current 10 00
610. Revolving Armature and Magnet 12 00
611. Electro Magnet, revolving in a magnetized steel ring 5 00
612. Electro-Magnetic Engine 10 00
613. Helix and Bar 2 50
614. Electro-Magnetic Machine 10 00
615. do do 24 00
616. Compound Magnet 2 00
617. Horse-Shoe Magnet, 12 inch 2 25
618. do do 6 inch 0 50
619. Mariner's Compass 0 40
620. Set of Magnetic Toys 0 50

(c) Charts and Illustrations.

621. Principles of Magnetism—Magnets—Electro Magnetism—Electric Telegraph and Magneto-Electricity $1 50

6. Mechanics and Mechanism.

(a) Apparatus.

622. Mechanical Powers, mahogany frame, with three sets of brass pulleys, two sets of brass weights, compound levers, wheel and axle, screw and lever, inclined plane, ship's capstan, &c. $17 50
623. Collision Balls, six one-half inch balls 3 50
624. Model of Screw 1 25
625. Model of Lock 1 75
626. Gridiron Pendulum .....
627. Centrifugal Machine 9 75

(b) Charts and Illustrations.

628. Johnston's Properties of Bodies $2 50
629. Reynold's Illustrations of Matter and Motion 3 00
630. Laws of Matter and Motion 1 50
631. Measures and Weights of the Metric System, with English equivalents 2 50

7. Hydrostatics and Hydraulics.

(a) Apparatus.

632. Set of Equilibrium Tubes $6 00
633. Set of Three Glass Tubes, of different calibre and capacity to illustrate fall of water 16 00
634. Apparatus to illustrate spouting of fluids, with their fall from different heights 6 00
635. Apparatus to illustrate pressure of water 20 00
This is for proving that the pressure exercised by a fluid from above downwards on the bottom of the vessel in which it is contained is quite independent of the form of the vessel.
636. Hydrostatic Pump 25 00
637. Hydrostatic Bellows 6 00
638. Model Archmides Pump.
639. Under and Overshot Wheels.

(b) Charts and Diagrams.

640. Johnston's Illustrations of Hydrostatics $2 50
641. do do Hydraulics 2 50

VII. Kindergarten Illustrations.

(a) Trades, Working Models, &c.

642. Printing Press with movable type $4 50
643. Miniature Models of Tools used by Bookbinders 0 35